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GRADUATE TEACHING OF UROLOGY*

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During the last few years, much has been said and written against the specialist in the practice of medicine, and most of this, curiously enough, has come from the medical profession. I take it that this agitation is directed against the pseudospecialists, the poorly equipped, badly trained men, practicing in the various medical and surgical specialties. Certainly no one would criticize the work of a specialist whose worth is unquestioned, who is the master of all the details of his chosen field, and combines his work in his field with a broad outlook on medicine as a whole. During the last twenty-five years, the practice of medicine has undergone greater changes than have characterized any previous period. These changes are, in part, a result of the ever-increasing discoveries in the fundamental sciences, and the many new developments in clinical medicine, as well as the result of advances in the problems of special diagnosis and special treatment. Because of these advances, a division of labor has necessarily resulted, and what is more natural than that, with the division of labor, the field of specialization should enlarge?

The tendency to specialization is not limited by any means to the practice of medicine. Specialization has been known and recognized in other professions, and in medicine it is not of recent date, though it must be admitted that the tendency today is stronger than it has been in the past. Commerce, economics and, for that matter, all professions, are showing in no mistakeable way that the trend is toward specialization. In the field of chemistry, for instance, we find many subdivisions of labor, both in chemical research and in industrial chemistry. If we turn to the activities in one of the other great professions, namely, the law, we find specialties in its practice, and, curiously enough, some of these specialties, like some of the specialties in medicine, are of recent origin; that is, they are the result of our present day environment as influenced by extrinsic factors. If we direct our attention to finance, we find that in the world of finance, too, specialization has crept in.

The training of specialists, whether in the field of internal medicine, in general surgery, or in the surgical specialties, must be considered from three broad and impartial points of view: (1) the improvement of the standard of medical service rendered to the patient; (2) the training and development of men who, after their training, will be in a position to render this high type of service to the sick, and (3) the stimulation of research.

* Chairman's address, read before the Section on Urology at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

IMPROVEMENT OF STANDARDS

The failure to recognize that the patient has certain rights has undoubtedly led to some of the present day criticism of medical practice. In other words, patients have the right to expect the best medical service that it is possible for them to obtain. In order to gratify this justifiable expectation of a higher order of medical service, it devolves on us to develop, as the years go on, better and better medical men, whose training should come from within the profession, and not from without.

There are many extrinsic factors, which are influencing the practice of medicine today. For example, in a report at the annual meeting of the American Child Health Association, it was stated that "one of the most important services which the association can render is that of keeping in touch with the medical profession and informing them of the need for child health work, and prompting progress in this throughout the country, as well as stimulating the better training of physicians for preventive service in their private practice, and the better training of health administrators."

The various campaigns of publicity, such as the one recently inaugurated by one of our life insurance companies in one of the popular monthly magazines on behalf of the Schick test, tend to bring the practice of medicine into closer contact with the world outside the "forbidden city," with the result that the public will not be slow in demanding better men and a higher standard of practice.

As urologists, our share in these significant movements is not a negligible one, but concerns itself in a serious manner with the proper training of the urologist. Scarcely more than a generation ago there was scant recognition of this specialty, of its claim in hospital and college work, in genito-urinary surgery in the clinic or in private practice.

In spite of the fact that today full recognition has not been given all specialties, there is a movement on foot against the undergraduate curriculum as it obtains today, and a reduction in the number of specialties taught is the watchword of this movement. It may come to pass that some of the specialties will either not be taught at all or will only be given a very limited amount of instruction, in which event, we, as medical educators, must provide plenty of opportunity for postgraduate instruction, not only for those who wish to specialize but also for the recent graduate, and for the general practitioner who wishes further to perfect himself in a special line of work.

TRAINING

When the question of the training of the specialist is discussed, let me state at the outset that I am unqualifiedly in harmony with the view that the specialist must be broadly trained, the more broadly trained the better.

Criticism has been directed against some of the specialties because of the alleged narrow views that the specialist entertains. It is asserted that this is due to his lack of the right sort of training and to the narrow confines within which he works. The urologist should always be trained along the lines of the widest gage, since much of his work is closely allied with many of the other departments of medicine and surgery. To be more specific, one may state by way of illustration that many of his problems of differential diagnosis touch on many of the other departments of medicine.

The differential diagnosis between lesions of the kidney and ureter and the various lesions of the gallbladder and liver, as well as various lesions of the stomach, duodenum and appendix on the right side of the abdomen, make it imperative that he possess a comprehensive knowledge of abdominal diagnosis. Because of their rarity, lesions in the left upper quadrant do not often require differential diagnosis. However, occasionally, a differentiation is necessary between lesions of the spleen and the left kidney. The urologist must therefore be familiar with the various diseases of the spleen that may be confused with lesions of the kidney. Not only must he be broadly trained, so as to be in a position to make this differentiation, but, furthermore, he must be broadly trained so as to exercise the best judgment; for example, if at operation an enlarged spleen is found, his knowledge of the pathology and the physiology of this organ should preclude its removal just because it is enlarged.

This broad training should include also a working understanding of the pathology of the female genital tract, since many of the genital lesions in women produce bladder symptoms. The urologic complications of pregnancy constitute a chapter which should not be foreign to him.

Various urinary disturbances and sexual symptoms are due to lesions in the central nervous system, and an understanding of them, as well as what lesions might cause them, will greatly aid one engaged in the field of urology in making at least a tentative diagnosis. Rare lesions of the nervous system may be due to disease of the blood, such as primary pernicious anemia with secondary degeneration of the spinal cord, producing bladder symptoms. The training of the well-equipped urologist should stand him in good stead in the recognition of the important point that the bladder symptoms are due to disease of the cord, that the disease of the cord is secondary to the pernicious anemia, and that the bladder symptoms are merely incidental; hence treatment should not consist of bladder irrigations but should be directed to the primary cause.

He should also be familiar with pediatric conditions and be in a position to render aid in an understanding way, since many urologic problems in diagnosis and treatment in infants and children are continually coming up for consideration.

If one pauses to consider the various diagnostic problems that today confront the urologist, it would be foolhardy to say that his training should not be on the broadest basis, which should include not only a complete knowledge of the various genito-urinary diseases, but a surgical training that will enable him to carry out the various major urologic operations. Should coexisting pathologic conditions be found that need correction, he should be in a position to care for such conditions.

Criticism has been directed against us in the past for our supposed lack of ability as surgeons. This, it seems to me, is a criticism of our system of medical education and of our system of training men, more than of us as individuals. This is a fault that must be corrected in the future by providing ample opportunity for the training of urologic surgeons who will be above this criticism.

That we, as urologists, are not the only specialists who have been criticized is made apparent to us in a recent address by Dr. W. J. Mayo,[1] who says that more than 50,000 men are performing operations in the United States today and of this number only about 10,000 are well qualified surgeons.

In order to reach this enviable goal, it is absolutely necessary to have at our disposal a sufficient amount of clinical material to enable the young man in training to operate under the supervision of the chief of the service, or his assistants. This means that a service of a sufficiently large number of beds must be established in all teaching hospitals.

It might be inferred from the foregoing that I am an enthusiast on the subject of surgical craftsmanship. I shall correct this impression at once by asserting that we should not countenance technicians and regard purely technical performances of operations as the end to be attained. This is only one link in the chain of training. Accurate urologic diagnosis and a correct appreciation of surgical pathology should go hand in hand with the ability to operate. The relationship between pathology and diagnosis is a close one; a urologist cannot be of the first rank if he fails to recognize this fact.

This is particularly true in our own chosen field, in which the development of the diagnostic side was the prime factor in the development of urologic surgery. As has been stated, the criticisms that were launched against the technic of the urologic surgeon were due to the fact that the material at hand was limited, and the urologist was greatly handicapped; even today, despite the fact that our specialty is recognized as a distinctive one, the opportunities for the development of the surgical side of our work are not what they should be.

That this condition is showing signs of improvement is a hopeful note that must be pleasing to all. To ascertain the status of urology in hospital practice, a questionnaire was submitted to a number of hospitals in the United States and Canada, hospitals containing more than a hundred beds. This survey shows that 146 hospitals in the United States and Canada replied to the questionnaire. Of this number, 102, or 69.8 per cent., stated that they had a genito-urinary service; thirty, or 20.5 per cent., stated that they did not have a genito-urinary department; and fourteen, or 9.5 per cent., failed to answer the question at all. An important query was, whether any restriction was placed on the number of beds available for urologic cases. Seventy-three hospitals do not limit the number of cases admitted, and only thirty-nine stated that the beds were limited.

The growth of urologic services, as shown in this survey, should be of interest to all of us, for it is a healthy growth, achieved in a conservative manner, and due altogether to the excellent work that has been accomplished by the urologists. The first hospital to institute a urologic department was the Hartford Hospital in 1856. From 1856 to 1904, there were eleven genito-urinary services, whereas from 1905 to 1924, eighty-eight genito-urinary departments were instituted.

1. Mayo, W. J.: Surg., Gynec. & Obst. 38:282 (Feb.) 1924.

Many of the questionnaires were sent to teaching hospitals, and it was very gratifying to note that, of the 126 institutions which replied to the question of whether or not their genito-urinary cases were used for teaching, eighty-eight hospitals replied in the affirmative and thirty-eight in the negative. In Canada, the situation is particularly fortunate; eight out of eleven hospitals stated that the cases are utilized for teaching, whereas only three hospitals do not follow this course.

The disposition of patients with venereal disease suffering with complications revealed the fact that ninety-seven hospitals admit cases with complications of gonorrhea, such as gonorrheal arthritis, or epididymitis, and twenty-five hospitals do not. In seven instances, the statement was made that only occasionally are such cases admitted.

In eighty-nine of the 106 hospitals having services, the genito-urinary cases, on admission, are assigned to the genito-urinary department. As a part of the teaching of urology, it is important, of course, to give instruction in the treatment of venereal disease. In thirty-nine institutions, the venereal cases are limited in the number of beds for the treatment of these cases.

It goes without saying, that, in the training of the urologist and in the development of postgraduate instruction in urology, the hospital facilities must be of an adequate character. Failure to provide hospital facilities in the genito-urinary department means the failure to attract students to do graduate work in this field. It means a complete breakdown in any effort to provide proper graduate training in our specialty. No student will be attracted to take up urology as a specialty when the opportunities do not exist for bringing him in touch with those cases which require surgical treatment.

The outpatient department of genito-urinary surgery must, first of all, be a well equipped department as regards the physical equipment. It must have a sufficient amount of modern equipment so that all, or nearly all, diagnostic procedures, and many of the therapeutic measures, can be carried out. The outpatient department should have a competent staff of instructors; and patients in this department are deserving of the same conscientious study and careful consideration that are given hospital cases and patients in private practice. It goes without saying that our unremitting attention to detail, both in the preoperative study and in the treatment of cases, as well as in the treatment after the operation is over, have been important factors in contributing to our success as urologists. In this way, we are able to render a better service to the patient than does the occasional operator who is interested only in the technical side.

A systematic amount of instruction should be given in the surgical pathology of the genito-urinary tract, and a definite plan should be devised to this end. Gross pathology can be taught from the material obtained at operation, and histopathology should not be neglected, not only the histopathology of lesions ordinarily encountered, but also the uncommon types of lesions, such as metaplasia, malakoplakia and cystitis cystica. Provision should be made for bacteriology, both experimental and clinical. Because of the frequency of urinary tract infections, this all-important branch of laboratory work must be given in a comprehensive way. The student in urology should have access to a modern serologic laboratory. The fundamental principles of the Wassermann test, the gonococcus fixation test and other serologic reactions should be understood.

Since much of our work is amplified by roentgenology, ample provision should be made for instruction in roentgenology, chiefly in the realm of the reading of films made of the urinary tract. Film reading is an important phase of this subject, and a well trained urologist should be able to read his own pyelograms, cystograms and ureterograms. He should be able to interpret carefully extra-urinary shadows, such as evidence of calcification in the lymph glands, and phleboliths. A certain amount of instruction should be given in allied roentgenologic studies, such as bone changes due to metastases in malignant disease of the kidney, bladder and prostate. Certain types of gonorrheal arthritis call for the reading of films. Recently, much consideration has been given to the rôle of the teeth in producing infection in the genito-urinary tract; hence, the urologist should be able to read correctly films of the teeth.

STIMULATION OF RESEARCH

Somewhere during his course of instruction, a student should be given a problem in research. This is a very important part, it seems to me, in any consideration of graduate instruction. Many problems still remain to be solved in the laboratory of experimental pathology, bacteriology, pharmacology and surgery. Nor is it necessary that all the research work be experimental, since, in a large clinic, there is always ample clinical material that gives abundant opportunity for working out many of the clinical problems in urology. The importance of a definite amount of time being devoted to the study of anatomy and physiology of the genito-urinary tract must not be overlooked, and provision must be made to give graduate students this opportunity. Instruction in these branches should be required, the intensive study of each depending on the knowledge or lack of knowledge of the candidate who contemplates being trained as a genito-urinary surgeon. My own experience, and I am sure this is the experience of other urologists, has made plain how important an asset a complete knowledge of the anatomy and physiology of the genito-urinary tract is in operative work, and in establishing a diagnosis when the shadows of doubt fall thick and fast. I believe it should be impressed on the graduate student that both anatomy and physiology of the genito-urinary tract are studies of prime importance, and that though he may think that, having finished with them in his undergraduate days, he is through with them, he will not succeed as a surgeon of the high quality he should be, if he does not review them at the beginning of his graduate study of urology.

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Action of Quinin in Malaria.—In the treatment of malaria, the train of events is, in our opinion, as follows: Quinin given to a patient whose blood contains numerous malaria parasites invariably destroys directly, or more probably indirectly, large numbers, but not all, of the parasites, thus setting free a considerable quantity of soluble antigen. The antigen provokes by stimulation of the host's tissues the formation of immune body. The immune body, if present in sufficient amount, destroys the remaining parasites, thus resulting in sterilization of the infection and in the cure of the patient. For a cure to be obtained, this hypothesis demands, first, the setting free of a considerable quantity of antigen by the destruction of a large number of parasites, and, second, a capacity on the part of the host to respond to the antigen by the formation of a sufficient quantity of immune body. If, for any reason, either of these two requirements is not satisfied, the infection is not completely sterilized and a relapse occurs.—Yorke, W., and Macfie, J. W. S.: *Tr. Royal Soc. Med & Trop. Hyg.* **18**:25 (March-May), 1924.

INTRAPERITONEAL HEMORRHAGE FROM RUPTURED OVARIAN CYST *

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Clinically, ovarian hematomas are divided into four well recognized types: the large ovarian cysts with hemorrhagic contents due to twisting of the pedicle of the cyst or other conditions; the perforating hemorrhagic (chocolate) cysts of the ovary so well described by Sampson, and the follicular and corpus luteum cysts of the ovary which on their rupture may give rise to severe intraperitoneal hemorrhage.

The first type, as a rule, does not give rise to intra-abdominal hemorrhage; the second type likewise gives rise to but little bleeding in the peritoneal cavity, since the perforation in the cyst becomes readily sealed by becoming adherent to the peritoneum of the pelvis or to the adjacent organ with which it comes in contact. It is therefore with the third and the fourth types, or the follicular and the corpus luteum cysts with rupture, causing intraperitoneal hemorrhage, that I wish to deal in this paper.

During the summer of 1923, from July 18 to August 10, I operated on two women with severe intraperitoneal hemorrhage giving rise to alarming symptoms. The first case was diagnosed as a ruptured ectopic pregnancy; the second was presumed to be an ovarian cyst with twisted pedicle, complicated by acute appendicitis. At operation it was found, in both cases, that the hemorrhage was due to the rupture of a follicular cyst of the ovary. The reports that follow explain these cases in detail. These errors in diagnosis prompted me to look up the literature on the subject, in order, first, to ascertain the frequency with which the lesion occurred and, secondly, to establish how often the condition had been diagnosed before operation. Previous to 1900, the references do not establish clearly whether or not the hemorrhage was due to ectopic gestation; for this reason only the literature since that period has been abstracted.

A review of the cases reported leads one to infer that bleeding from a follicular cyst or from a corpus luteum cyst of the ovary, with rupture, should be considered in the differential diagnosis of acute conditions of the abdomen in the female.

As far as the etiology is concerned, Heidler [1] is inclined to discredit the rôle ascribed in certain cases to normal coitus in the production of ovarian hyperemia, but concludes that in rare instances it can give rise to follicular hemorrhage. Kermauner orally described to him a case in which the patient, following a hot bath and cohabitation, awoke after two hours of sleep with violent pain in the right side of the abdomen. A surgeon was summoned, and he diagnosed appendicitis. Laparotomy showed a large quantity of free blood in the abdomen, proceeding from a bleeding follicle of the right ovary. Resection of the ovary was followed by recovery. The microscopic examination showed no evidence of pregnancy.

Trauma, such as criminal abortion, the injection of green soap (Strassman), sports (tennis, riding or rowing), operations, especially vaginal, or therapeutic manipulations, may be differential etiologic factors.

The influence of other factors, such as poisoning from phosphorus, infectious diseases, disorders of the heart and the liver, apoplexy of the heart and the brain, influenza and rheumatism, is suggested.

Hornung [2] states that ovarian hematomas are often found in normal ovaries. The corpus luteum obviously plays an important rôle in the genesis of ovarian hemorrhage; and the process of menstruation, with its heightened capillary permeability, appears to be a contributing factor. Varicose dilatations in the ovarian stroma, as described by Schroder, can burst when the follicle ruptures.

Injurious factors of a general or local nature, such as active or passive hyperemia, heart and lung trouble leading to general venous stasis, tumors in the small pelvis, uterine retroflexion, inflammatory processes or a sudden checking of normal circulation as in torsion of a pedicle, can influence ovarian hemorrhage. The assertion made by Kehrer and Strassman that masturbation and interrupted coitus play an important rôle has not been proved; but excessive cohabitation obviously can produce a dangerous hyperemia in the generative organs, as shown in cases of Zacharias, von Winiwarter and Kober. It is true, however, that in this connection trauma may be a factor (Pfannenstiel). Any pathologic condition of the blood, such as leukemia, toxic injuries, petroleum burns and infectious diseases, can be of etiologic significance.

In Lindig's [3] case, the abdomen was found full of blood at operation, and the tubes were intact. The right ovary was bluish and enlarged, and contained a 1.5 cm. tear, which led into a cavity the size of a hazelnut. The left ovary seemed normal. The right ovary was extirpated, and the patient made a rapid recovery.

A very careful histologic diagnosis showed no signs of the reactive phenomena following implantation of an ovum. In the vicinity of the tear was found a blood vessel clogged by a thrombus. There were no degenerative or inflammatory modifications of the vascular walls, nor any anatomic condition to explain the presence of this object, and no clinical data suggesting circulatory disturbances. Only one fact could be ascertained with certainty, i. e., that in view of the wealth of blood platelets in the thrombus, the clot had originated in the living organ, and had not developed after the operation. The strain on the ovarian blood vessels caused by the periodic variation in blood pressure is an established fact, and this is responsible, eventually, for menstrual and ovulation sclerosis.

The defective elasticity of the blood vessel was doubtless a contributing factor in the production of the extravascular collection of blood. An analogy is to be found in the so-called aneurysm of the arteries of the brain (intramural and extramural hematoma). The majority of the cases appear to have occurred in the premenstrual period.

Savage [4] believes that the ovarian hematomas of the graafian follicle, as indicated by macroscopic and microscopic appearances, "result from a multiple and premature ripening of the graafian follicles, which is due to the presence of an increased amount of blood in the ovary apart from the normal yellow body, that an

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

1. Heidler, H.: Haematoma ovarii interstitiale, Zentralbl. f. Chir. **50**: 642, 1923.

2. Hornung, R.: Das Ovarium als Quelle intraperitonealer Blutungen, Zentralbl. f. Gynäk. **47**: 523, 1923.

3. Lindig, P.: Eine histologische Studie über das Wesen ovarieller Blutungen, Zentralbl. f. Gynäk. **45**: 1182 (Aug. 20) 1921.

4. Savage, S.: Hematoma of the Ovary and Its Pathological Connection with the Ripening and the Retrogression of the Graafian Follicle, Brit. Gynec. J. **21**: 285-305, 315-321, 1905-1906.

outpouring of blood takes place into these follicles from the vessels of the thecae internae, that the cysts unite, and that, being immature (possibly by reason of the absence of the presiding ovum), the normal retrogression of the follicles does not take place, and a blood cyst remains. It may be noted that the pathological condition of these blood tumors, and of the amount of the fluid contents in them, is brought about more by the rupturing of the blood vessels in association with immature follicles than by the enlargement and subsequent bursting of these follicles."

Of the ovarian hematomas of the corpus luteum he says: "This group will include those blood cysts which arise at a stage in the life history of the graafian follicle after the lutein cells have become fully developed. Lutein cells may be present or absent in the tumors of this group according to the time that has elapsed since the retrogression of the follicle commenced, and also according to the extent of the inflammation present."

Winiwarter [5] writes that, of the three groups outlined by Orthman, (1) follicular hemorrhage, (2) corpus luteal hemorrhage and (3) hemorrhage of the stroma, the first is the most frequent, and the last, genuine ovarian apoplexy, the most rare.

When a mature follicle bursts, there is a secondary low grade hemorrhage which can be designated as normal. One speaks of follicular hemorrhage only when the bleeding takes place in a closed and unripe follicle. The effusion which is especially frequent in a cystically degenerated ovary, can be resorbed without producing clinical symptoms, or can break through into the abdominal cavity and give rise to hematocele, as in the case described by Winiwarter.

Benthin,[6] Kynoch [7] and Lockyear [8] wrote on pelvic hematocele from corpus luteum cysts, while Poulain [9] described retro-uterine hematocele without rupture of the tube.

Gabriel [10] elaborated on the subject of ovarian hemorrhage from corpus luteum cyst; Bartels,[11] in the title of his paper, asked, "Can rupture of the corpus luteum cause severe intraperitoneal hemorrhage?" Forssner [12] took up the question of severe intraperitoneal hemorrhage from the ruptured graafian follicle or corpus luteum cyst without coincident pregnancy, and compiled forty-seven cases from the literature, usually accepted as instances of follicular hemorrhage, but in which insufficient examination had been made to make the diagnosis positive

Ruptured ovarian hematomas with intraperitoneal hemorrhage were discussed by Edgar,[13] Heidler [1] and Jayle,[14] who reported three cases of hematic cysts with severe intraperitoneal hemorrhage, and in addition abstracted thirteen cases from the literature. Leriche and Blanc-Perducet,[15] Ohman [16] and Romme [17] also wrote on the same subject.

Lee [18] brought to attention the question of hemorrhagic cyst of the ovary simulating ectopic pregnancy; Martin [19] did likewise with tubo-ovarian hematocele simulating ectopic gestation, and Michon [20] described intraperitoneal hemorrhage from a solid tumor of the ovary, with torsion of the pedicle.

Life endangering bleeding from the ovary formed Roll's [21] subject, and ovarian hemorrhages that of Rosseau.[22]

Savage [4] took up hematoma of the ovary and its pathologic connection with the ripening and the retrogression of the graafian follicle, and reported seven cases. Although no signs of intraperitoneal hemorrhage were found at operation, the hemorrhage occurred as the cysts were ruptured in their extraction.

Tartansen [23] described a case of pelvic hematocele from a ruptured hematic cyst of the ovary, associated with fibroid disease of the uterus and in which, on examination, no ectopic gestation was found.

TABLE 1.—*Intraperitoneal Hemorrhage from Ruptured Follicular Cyst*

Reporter	Reference	Number
Bonneau	Paris chir. **4**: 1101, 1912	1
Cranwell	Ann. de gynéc. et d'obst. **9**: 226, 1912	1
Cohn	Arch. f. Gynäk. **94**: 505, 1913	3
Engstrom	Mitt. a. d. gynäk. Klin. d. O. Engstrom in Helsingfors **7**: 147, 1907-1908	1
Errard and Fournier	Bull. et mém. Soc. anat. de Paris **91**: 203, 1921	1
Kermauner	Cited by Heidler[1]	1
Hornung	Zentralbl. f. Gynäk. **47**: 523, 1923	2
Lindig	Zentralbl. f. Gynäk. **45**: 1182 (Aug. 20) 1921	1
Novak	J. A. M. A. **69**: 1160 (April 21) 1917	1
Pfeilsticker	Med. Cor.-Bl. d. Würtemberg. ärztl. Ldsver. **83**: 535, 1913	1
Primrose	Tr. Am. Surg. A. **30**: 599, 1912	2
Simonds	München. med. Wchnschr. **64**: 1565, 1917.	1
Thies	Zentralbl. f. Gynäk. **47**: 525, 1923	2
Winiwarter	Ztschr. f. Geburtsh. u. Gynäk. **68**, 1911	1
Yersin	Rev. méd. de la Suisse rom. **40**: 818 (Dec.) 1920	1
Total		20

In Tables 1 and 2, I have grouped these cases in which the reporter gave either a follicular cyst or a corpus luteum cyst as the specific cause of the abdominal hemorrhage. There were twenty cases from follicular cyst and twenty-two cases from corpus luteum cyst. In Table 3, I have added seventeen cases of hematic cysts, type not stated, thus making a total of fifty-nine cases obtained from the literature.

Heidler's [1] case is worthy of mention:

A 20 year old nullipara, with a history of defloration and cerebral disorders resulting in an attempt at suicide, had menstruated profusely at the age of 18, at first regularly. At the last regular period, there occurred a profuse hemorrhage with abundant coagula, which continued up to the time of admission

5. Winiwarter: Retro-Uterine Hematocele Due to Bleeding from a Degenerated Ovary, Ztschr. f. Geburtsh. u. Gynäk. **68**: 1911.

6. Benthin: Hematocele als Folge einer geplatzen Corpus Luteum Cyste, Monatschr. f. Geburtsh. u. Gynäk. **27**: 532, 1913.

7. Kynoch, J. A. C.: Pelvic Hematocele from Rupture of a Blood Cyst of the Ovary, J. Obst. & Gynec. Brit. Emp. **23**: 304, 1913.

8. Lockyear, Cuthbert: Pelvic Hematocele of Ovarian Origin, Proc. Roy. Soc. London, Obst. and Gynec. Sec. **3**: 106, 1910; J. Obst. & Gynec. Brit. Emp. **17**: 253, 1910.

9. Poulain, J.: Hématocèle rétro-utérine sans rupture de la trompe, Rev. mens. de gynéc., d'obstét. et de pédiat. **5**: 76-78.

10. Gabriel, A.: Ueber die Enstehung der Hematocele retrouterina aus Ovarialblutungen, Arch. f. Gynäk. **64**: 449, 1901.

11. Bartels, C. D.: Can Rupture of the Corpus Luteum Cause Severe Intraperitoneal Hemorrhage? Ugesk. f. Læger. **81**: 935 (June 5) 1919.

12. Forssner, H.: Können grosse intraperitoneale Blutungen aus graafschen Follikeln oder Corpus Luteum Bildungen ohne Vorhandensein von Schwangerschaft entstehen? Arch. f. Gynäk. **105**: 74-106, 1916.

13. Edgar, J.: Ruptured Hematoma of the Left Ovary, the Cause of Pelvic Hematocele, Glasgow M. J. **53**: 294, 1900.

14. Jayle: Pelvic Hematocele from Rupture of Blood Cyst of the Ovary, Rev. de gynéc. et de chir. abd. **13**: 185-222, 1909; Abstr., Brit. M. J. **1**: 50, 1909.

15. Leriche, R., and Blanc-Perducet, M.: Hémorrhagie pelvienne intrapéritonéale diffuse par rupture d'un kyste hémorrhagique, Rev. de gynéc. et d'obst. **8**: 529-534, 1911.

16. Ohman, K. H.: Ovarian Hematoma and Ovarian Hemorrhage, Duodecim Helsinki **29**: 55-76, 1913.

17. Romme, Madeline: Hémorrhagie abdominale d'origine ovarienne, Ann. de gynéc. et d'obst. **12**: 736-738, 1917.

18. Lee, J. A.: Hemorrhagic Cyst of the Ovary Simulating Ectopic Pregnancy, Brooklyn M. J. **19**: 209, 1905.

19. Martin, P. F.: Tubo-Ovarian Hematocele Simulating Ectopic Gestation; Surgical Conservatism in Dispute, J. Indiana M. A., 1910, pp. 481-484.

20. Michon, E.: Tumeur solide de l'ovaire; torsion du pédicule; hémorrhagie intrapéritonéale; laparotomie; guérison après embolus pulmonaire (Rapport de Souligoux), Bull. et mém. Soc. de chir. de Paris **25**: 1072-1077, 1909.

21. Roll, J.: Life Endangering Bleeding from the Ovary, Norsk Mag. f. Lægevidensk. **9**: 27-31, 1911.

22. Rosseau, E.: Hémorrhagies ovariennes, J. méd. de Bruxelles **8**: 785, 1903.

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in the clinic. Examination showed a small, anteverted uterus, and to the left and posterior to this a small, sensitive, not entirely mobile tumor, the size of a pigeon's egg. Treatment based on the assumption of juvenile metrorrhagia effected no results. After three days, the temperature had risen to 38.9 C. (102 F.). A curettage and a posterior vaginal incision were done; no blood was found in the Douglas space, and the incision was sutured. In the next days, the hemorrhage gradually ceased, but the temperature remained high. About two and a half weeks after the operation, symptoms which seemed to indicate scorbutus appeared, but an antiscorbutic diet produced no effect. The picture then resembled sepsis; high grade anemia developed, and the patient died of cardiac weakness after slight uterine bleeding.

TABLE 2.—*Intraperitoneal Hemorrhage from Ruptured Corpus Luteum Cyst*

Reporter	Reference	Number
Adams	Brit. M. J. **1**: 712, 1913	1
Barolin	Med. Klin. **16**: 9 (Jan. 4) 1920	4
Bender and Marcille	Bull. et mém. Soc. anat. de Paris, 1904, p. 569	1
Bertkrau	Charité-Ann. **34**: 571, 1910	1
Bookman	M. Rec. **86**: 184, 1914	1
Bovée	Surg., Gynec. & Obst. **28**: 117 (Feb.) 1919	1
Chassot	Rev. mé. de la Suisse rom. **40**: 453 (July) 1920	1
Cohn	Arch. f. Gynäk. **94**: 505, 1913	3
Ferguson	Edinb. Obst. Trans. **37**: 307, 1911-1912	1
Hind	Brit. M. J. **2**: 189, 1905	1
Ladinski	Am. J. Obst. **62**: 487, 1910	1
Smith	Am. J. Obst. & Gynec. **1**: 240 (Dec.) 1920	1
Taylor	Practitioner **101**: 37 (July) 1918	2*
Warnshuis	Physician & Surgeon **34**: 123, 1912	2
Zacherl	Arch. f. Gynäk. **119**: 18 (June) 1923	1
Total		22

* Same patient.

The bleeding into the free abdominal cavity was probably the result of the oozing of the blood through gaps in the ovarian tissue, for no rupture was demonstrated. The bleeding into the ovary is to be regarded as a primary interstitial hemorrhage, due to the septic condition and the consequent bacteriotoxic injury of the blood vessels.

It is possible that the removal of the left ovary might have saved the patient. Heidler admits that a better acquaintance with the literature of the subject would have made possible an intravitam diagnosis. He believes, however, that death was due primarily to sepsis, and that operation would have been futile.

Furguson's [24] case is of interest, since it shows hemorrhage from a corpus luteum after operation:

A patient, aged 37, had a supravaginal hysterectomy performed by Furguson, the operation being a simple one: both tubes and ovaries were left behind. During the operation, a large corpus luteum was noticed on the right ovary. The operation was at 9:30 a. m.; at 5 p. m. the nurse noticed that the patient was pale; at 8:30 that evening the pulse was 130 and very weak, and there were marked signs of hemorrhage. The wound was reopened under anesthesia, and a large quantity of clotted and fluid blood was found in the peritoneal cavity. Dr. Furguson found that the bleeding had come from the corpus luteum seen at operation. The appendage was removed, and the patient recovered.

In the light of this operator's experience, one might hesitate to leave uncared for an ovary with a large corpus luteum in it.

Taylor [25] reports a case in which the hemorrhage had occurred from a corpus luteum cyst of the right ovary, and eighteen months later from a corpus luteum of the left ovary. The left ovary had appeared normal at the time that the right was removed. The patient made an uneventful recovery.

The preoperative diagnosis made in most cases abstracted from the literature were: acute appendicitis; extra-uterine pregnancy; tubal pregnancy; ovarian cystoma; ovarian hemorrhage, acute appendicitis or intestinal perforation; severe intraperitoneal hemorrhage; inflammatory tumor of the adnexa; hematocele and tubal pregnancy; abdominal hemorrhage; swelling of the pouch of Douglas; diseased adnexa, and internal hemorrhage.

REPORT OF CASES

Dr. John T. Bottomley has furnished me with the history of a case of this kind which came under his observation.

A woman, aged 30, single, had always been well; she had no trouble with menstruation, and had menstruated two weeks previously. At 6 o'clock in the morning, she was taken with sudden pain in the lower part of the abdomen; the pain was more on the right at first, but extended across the abdomen; she vomited. She was doing special nursing at the Bay State Hospital, and had reached there at about 6:30 a. m. The superintendent said that she "looked terrible." The temperature was 98.8 F.; the pulse, at first scarcely perceptible, finally settled to 120. At 9:30 a. m., she had to give up work and go to bed; she felt faint, and the pain was severe and steady in the lower part of the abdomen. Dr. Paul saw her at about 9 and thought that she had a hemorrhage. When Dr. Bottomley saw her, at about 1 p. m., she was pale, but not white; she still had severe pain and the whole abdomen was tense; the pulse was of good volume and about 100 to 110 in rate.

An operation was performed under ether anesthesia; the peritoneal cavity was entered behind the belly of the right rectus muscle, which was pulled outward below the umbilicus.

TABLE 3.—*Intraperitoneal Hemorrhage* *

	Number of Cases
From follicular cysts	20
From corpus luteum cysts	22
From hematic cysts (type not stated)	17
Total	59

* The seven cases reported by Savage were not included in this table, since the hemorrhage occurred because of the rupture of the cysts during their extraction. The forty-seven cases collected by Forssner were also left out since he states that insufficient examination had been made to make the diagnosis positive.

A great quantity of clotted and unclotted blood welled up through the opening; the source was found to be a ruptured ovarian cyst (right) as large as a pullet's egg. There were signs of old pelvic inflammation about the tubes and the ovaries. The right tube and ovary were removed; the left tube and ovary were left in. The uterus was not enlarged. Layer suture of the abdominal wall was made. There was an uninterrupted convalescence.

AUTHOR'S CASES

CASE 1.—Mrs. M. A., aged 33, a tertipara, was admitted to the Carney Hospital, Feb. 10, 1922, with a diagnosis of severe vomiting of pregnancy. Her first pregnancy, which had occurred eleven years previously, had terminated in a normal delivery, but she was severely lacerated: one year later she

24. Furguson, J. H.: Case of Fibroid of the Uterus (Showing Unusual Form of Cystic Change) Removed by Supravaginal Hysterectomy; Where Severe Postoperative Hemorrhage Occurred from a Corpus Luteum, Necessitating Reopening of the Abdomen and Removal of the Ovary, Edinb. Obst. Trans. **37**: 307, 1911-1912.

25. Taylor, G.: Some Uncommon Causes of Pelvic Hemorrhage in Women, Practitioner **101**: 37-39 (July) 1918.

had another normal delivery, complicated by acute pyelonephritis. Her mother had died of puerperal septicemia; while, eight years previous to admission, the patient had had extensive plastic operations together wtih a suspension of the uterus and an appendectomy performed at the Framingham Hospital. Menstruation began when she was 12 years old; the periods, which lasted from two to three days, came at intervals of twenty-four days; her last menstruation had occurred Dec. 13, 1921, and had lasted three days. Her confinement was expected, Sept. 20, 1922.

She was referred to me because of almost continuous vomiting for nearly two months. The uterus was at the level of the umbilicus. She responded readily to treatment, which consisted of rest in bed and the intramuscular injection of an ampule of lutein morning and night, 12 ampules being administered. She was discharged from the hospital, Feb. 26, 1922, having been on the service sixteen days. During her stay in the hospital, the urine showed signs of chronic nephritis. The vomiting had completely stopped at the time of her discharge, and she was on a liberal diet.

She was admitted again, Sept. 13, 1922, in active labor; the vertex was presenting in the right occipitoposterior position, and after an efficient test of labor, because of the previous high cervical amputation, no dilatation of the cervix was apparent. For this reason, a Kroenig cervical cesarean section was performed, and she was delivered of a female child weighing 7¼ pounds (3.3 kg.). The puerperium was uneventful; the incision healed by first intention, and the patient was allowed out of bed on the twelfth day. September 27, fourteen days after operation, she developed a phlebitis of the left leg, and on October 4, a phlebitis of the right leg, although the lesion on the right was not as severe as that of the left side. She had chills; she was delirious and extremely sick; the temperature ranged between 98.4 and 104 F., and the pulse between 79 and 120. She recovered from these complications, and was discharged well, November 19, after staying in the hospital sixty-seven days. Her baby had done well, and was discharged weighing 8½ pounds (3.8 kg.).

May 1, 1923, she returned to the hospital with a moderately severe uterine hemorrhage. Examination revealed the uterus slightly enlarged, and a small mass was felt in the left vault. Complete rest in bed and fluid extract of ergot, administered twice a day, had no effect on the hemorrhage. She was curetted, May 9. The ether examination showed the left-sided mass to be movable, and it was thought to be a small ovarian cyst. A laparotomy was not considered at this time because of the patient's poor physical condition. The bleeding stopped after the curettage, and she left the hospital markedly improved after staying there for sixteen days. The pathologic diagnosis was hypertrophy of the endometrium and chronic endometritis. There was no evidence of malignancy.

July 18, the patient reported at my office. She was pale, in severe pain and, on examination, the mass on the left side appeared to have increased in size; both vaults were exquisitely tender. Shortly after the examination, she collapsed. A tentative diagnosis of ruptured extra-uterine pregnancy with severe intra-abdominal hemorrhage was made, because of the fact that the patient had skipped a period and also because of the findings in the pelvis. She was immediately sent to the Carney Hospital, where she was operated on about two hours after being seen in my office.

The abdomen was opened by a median incision. When the peritoneum was opened, a large amount of blood, both liquid and clotted, estimated as a liter, was found in the abdominal cavity. The bleeding was proceeding from a ruptured ovarian cyst, the size of an egg, in the left side of the pelvis. The right ovary showed a cyst, the size of a lemon; both tubes were normal; and the uterus was markedly hypertrophied. A supravaginal hysterectomy together with a double salpingo-oophorectomy was performed, and the abdomen was closed in layers.

The convalescence was uninterrupted, and she was discharged well, August 1, fourteen days after the operation.

The pathologic diagnosis was hypertrophy of the endometrium with simple cysts of the ovaries.

CASE 2.—Dr. H. G., aged 28, single, had a sudden fainting spell, March 23, 1923, followed by vomiting for thirteen hours; there was no pain. The physicians that saw her called it idiopathic vomiting; but a surgeon diagnosed the condition as chronic appendicitis. She was perfectly well two weeks later, and was driving her own car. April 22, she was in an automobile accident; her injuries consisted of contusions of the left upper arm and the left thigh. She had sharp pains across the abdomen, and a physician made a diagnosis of contusions. Since this accident, she had been unable to do any work without having sharp pains across the abdomen. In April and May, she had two attacks of jaundice and was constantly nauseated; the pain in the abdomen persisted. In June, she saw a neurologist, who said that she had typical neurasthenic symptoms. She could not eat, but stated that it was not the food that nauseated her. The neurologist consulted advised her to resume her practice. Driving her car gave her excruciating pain in the right side, radiating toward the thigh and symphysis. She continued to work until August 5, despite the pain. That day the right limb became rigid, and she had "terrific pain" in the abdomen. The next two days she made her calls and had no pain. The following day, at 1 p. m., she was "doubled up with pain"; the right leg was in flexion; the pain in the right abdomen was excruciating; she was distended, and the bowels had not moved for three days. Micturition was very painful. She was a physician, and as such diagnosed the condition as an ovarian cyst; as a patient, she called me on the telephone and made her own diagnosis of ovarian cyst with twisted pedicle. Later in the evening, she was seen by a surgeon, who made the diagnosis of appendical abscess.

The menstrual history began with the onset at 14 years. She missed the summer months, but menstruated, otherwise, every five weeks, the periods lasting from three to four days. When 16, she had a severe attack of dysmenorrhea, which was called appendicitis at that time. She always had pain in the right lower quadrant; this was at times griping, and at other times dull in character. The periods were regular from the age of 19 to 27, when she missed two periods. May 8, which was the date of her catamenia, she nearly collapsed with pain, but did not flow. June 8, a three-day period began in which she did not have pain. July 10 she had a scant menstruation; she was operated on, August 10, and flowed for three days, beginning August 13.

She was first seen by me, August 10. At this time, the abdomen was rigid, spastic and distended; the rectal examination was unsatisfactory, as it caused too much pain. The preoperative diagnosis was acute appendicitis or right ovarian cyst with twisted pedicle. After right oophorectomy and appendectomy had been performed at Springfield Hospital, August 10, the postoperative diagnosis was ruptured ovarian cyst (right); chronic appendicitis, and severe intraperitoneal hemorrhage.

Notes were made at the operation of a ruptured ovarian cyst (right), the size of a tangerine, with one twist in the pedicle. There was a large amount of free blood in the pelvis, estimated as 0.5 liter. The right tube was normal; the left tube and ovary and the uterus were normal. The appendix had several concretions, and was removed in the usual way. The gallbladder was thin walled and collapsible; there were no stones. The right kidney was freely movable and could be pulled down to the pelvis; the left kidney was normal. The spleen and the liver were normal. The abdomen was closed in layers.

The pathological diagnosis was a follicular cyst of the ovary.

The convalescence, which was followed by Dr. Allen G. Rice, was uneventful, except for a small stitch abscess which showed staphylococci on culture. The patient was discharged from the hospital with a healed incision.

CASE 3.—Mrs. R. M., aged 36, a sextipara, was admitted to the gynecologic service of the Carney Hospital, Jan. 24, 1924, with uterine bleeding. The family and past histories were negative. She began to menstruate at 13 years; she was regular, every twenty-eight days, and flowed profusely, without pain, for from six to eight days. She had had six pregnancies, which had terminated as normal deliveries.

The present illness had its onset, January 14, and consisted of a severe uterine hemorrhage, which was followed by "bloody staining" for two weeks. She had been confined to bed since January 14, and because of the continued bleeding, she was sent to the hospital.

The physical examination was negative except for the gynecologic condition. The abdominal examination elicited considerable tenderness in the right lower quadrant; spasm and rigidity were absent. The vaginal examination revealed a

lacerated cervix and perineum and a third degree retroversion. There was considerable tenderness in the right vault, although no mass could be felt.

The operation performed comprised dilation and curettage with bilateral trachelorrhaphy and colpoperineorrhaphy. A median abdominal, suprapubic incision was made. On exploration of the pelvis, the omentum was found to be stained with blood and adherent to the right tube and ovary. The adhesions were recent and easily separated. About an ounce of fluid blood was found in a pocket formed by the adhering omentum. The bleeding was issuing from a small rent in a corpus luteum of the right ovary; the right tube was normal, as were the left adnexa; the uterus was in third degree retroversion. A mattress suture of chromic catgut was placed around the bleeding corpus luteum; the uterus was suspended by the round ligaments; and the appendix, which showed signs of chronic inflammation, was removed. The abdomen was closed in layers. The convalescence was uneventful, and the patient was discharged from the hospital, February 10.

The right-sided pain had led to the diagnosis of chronic appendicitis before operation; and while this condition was found to exist, I am convinced that the pain was caused by the slight hemorrhage and by the adhesions to the right tube and ovary.

CONCLUSION

1. Previous to 1900, the literature is not clear as to the hemorrhages into the peritoneal cavity caused by ruptured follicular and corpus luteum cysts. Up to that time these hemorrhages were not clearly differentiated from those resulting from extra-uterine pregnancy.

2. Since 1900, the literature contains a number of case reports, each writer having met but few cases.

3. In most instances, the true diagnosis was established after the opening of the peritoneal cavity, a preliminary diagnosis of ectopic pregnancy or acute appendicitis having been made.

4. A review of the literature leads one to infer that this condition, although infrequent, should be given consideration, in the differential diagnosis of acute conditions of the abdomen in women.

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FATE AND FUNCTION OF THE OVARIES AFTER HYSTERECTOMY *

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The diverging views concerning the fate and function of ovaries that are retained after hysterectomy indicate that there are important problems still to be met in gynecology. Radicals and conservatives cite in support of their opinions the physiology of the ovary, its influence on metabolism and the normality of the individual, and its functional value at different periods in the woman's existence.

Radicals claim that the ovaries are essential for proper growth and development only during infancy and childhood, when they serve as glands of internal secretion. They state that, at puberty, the ovaries assume their specific and important rôle of reproduction, menstruation being only a physiologic mechanism related to this process. After sexual maturity is reached, they hold that the ovary is without somatic influence and that it is concerned only with procreation. The radicals advocate the removal of the glands when hysterectomy is necessary in adult life, since reproduction is no longer possible without a uterus, and the ovaries, therefore, have no function. Moreover, they assert that glands left after hysterectomy remain as a distinct menace because of their tendency to cystic or neoplastic degeneration. They believe that the ablation symptoms arising from a surgical menopause are incon-

TABLE 1.—*Years Under Observation*

Years	Number of Cases	Per Cent.
1–2	191	36
2–3	108	22
3–4	61	14
4–5	54	11
5–6	47	9
6–7	21	5
7–8	18	3

stant and transient, and are of only slight significance in the well balanced, unemotional type of women.

Conservatives, however, take a sharply contrasting view. They emphasize the dual function of the ovary, and urge that of no less importance than the reproductive function is the part that it plays as a gland of internal secretion. These observers state that this trophic influence of the ovary is of great importance to the woman, proceeds independently of the uterus, and is not affected by its removal. They assert that there is no evidence that the internal secretion ever ceases. The conservatives also emphasize the severity of ablation symptoms and believe that these mental and physical disturbances are definitely modified or controlled by leaving the glands; however, the integrity of these is materially affected by disturbances of the circulation and contiguous pathologic conditions. Altogether, the conservatives feel that the ovaries are of such importance as to justify very definite indications for their removal.

Eight years ago, we began a study at the University of California Hospital to determine the proper disposition of these glands when hysterectomy was done. It would appear that observations of this nature would be so frequent that all surgeons would have long since come to an agreement. Yet, in spite of numerous discussions, this problem remains in the foreground of gynecologic investigations. Interest in this subject has been renewed and stimulated since the advent of radium in the treatment of various pelvic disorders.

What happens to conserved ovaries is a complex question. The fate of the organs undoubtedly is dependent on several factors. My purpose in this paper is to present a clinical retrospect, and conclusions from observations.

My report consists of an analysis of the surgical menopause as it occurred in women with and without ovarian tissue. The frequency, severity, time of onset and duration of ablation symptoms have been studied and contrasted with similar disturbances of the natural menopause. Factors that might tend to modify these symptoms have been reviewed and grouped according to the age of the patient, her general condition before operation, the pelvic pathologic condition and the type of ovaries that were retained. The value of the conserved glands has been balanced against their tendency to degeneration. To complete the study, results with ovarian therapy have been included.

The material consists of 500 cases of hysterectomy, followed from one to eight years. Operative records

* From the Department of Obstetrics and Gynecology, University of California.

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were made in all cases, which furnished detailed description of the retained ovaries, the surgical technic which aimed to preserve the blood supply to the glands, and the presence or absence of residual pathologic changes after hysterectomy which might affect the glandular tissue (i. e., adhesions, varicosities, peritonealization). The cases were controlled by frequent postoperative pelvic examinations and questionnaires; the subjective symptoms and objective findings were carefully recorded. The conclusions have been determined solely by the evidence afforded by my own clinical observations.

If a tabulation of this nature is to be of any value, it is essential that the period of observation extend over considerable time. Half of the cases were followed for more than three years; no case followed for less than one year has been included in this study. It is often difficult to convince the patient of the necessity of reporting to the clinic for examination for years after operation, particularly if she is free from pain and symptoms of pelvic disorder.

The menopause is usually accepted as an expression of the termination of the cyclic phenomena in which the ovaries and endometrium participate. That this disruption is more far reaching, however, is evidenced by

TABLE 2.—*Frequency of Vasomotor Symptoms*

	Number of Cases	Postoperative Symptoms Per Cent.
Hysterectomy with removal of ovaries.....	329	80
Hysterectomy with retention of ovaries.....	171	42
Normal menopause	Approximately	50

disturbances of other units of the endocrine system and by a series of functional disorders of vasomotor, cardiac, gastro-intestinal and urinary origin, and by alterations in the nervous equilibrium. The somatic influence of the glands is proved by the local atrophies that occur following their removal. Of these disturbances, the vasomotor phenomena are most common and distressing.

TABLE 3.—*Onset of Menopausal Symptoms*

	Number of Cases	Immediate Per Cent.	Delayed Per Cent.	Total Per Cent.
Hysterectomy with removal of ovaries	329	80	..	80
Hysterectomy with retention of ovaries	171	27	15	42

FREQUENCY

The surgical menopause differs from the normal climacteric in that in the former there is an abrupt termination of the menstrual function, whereas in the latter this alteration is more gradual and associated with other evidences of senility. The vasomotor reactions characteristic of the normal climacteric occur in about 50 per cent. of women. The frequency of these reactions found in our series of surgical menopause is given in Table 2, which shows that the frequency of vasomotor reactions is definitely determined by the presence of ovarian tissue, and that the absence of the uterus per se does not affect the issue as shown by the similarity in the frequency of disturbance of the conservative group and natural menopause.

TIME OF ONSET

An analysis of the immediate and the delayed disturbances more strikingly emphasizes the immediate postoperative advantages of conserving ovarian tissue.

Study of the records indicates that the protective influence of the retained ovary is not permanent, and tends to disappear gradually in a definite number of women.

The delayed symptoms usually come on during the first year (78 per cent.), most of them starting within a few months after operation. Occasionally, they did

TABLE 4.—*Onset of Delayed Menopausal Symptoms with Conserved Ovaries*

	Number of Cases	Per Cent.
½ year	14	56
1 year	5	20
2 years.....	2	8
3 years.....	3	12
5 years.....	1	4

TABLE 5.—*Frequency of Severe Menopausal Symptoms*

	Number of Cases	Severe Disturbances Per Cent.
Hysterectomy with removal of ovaries.....	329	30
Hysterectomy with retention of ovaries....	171	12

not present themselves until several years had elapsed; in one case, not until nearly five years after operation. One fourth of the cases developed no symptoms until two years or more following operation. Since there is evidence to the effect that many women who escape the surgical menopause are likely to go through the climacteric at the normal time, we attempted to establish a causal relationship between the delayed symptoms and the normal menopausal age. This association existed in several of our patients, yet could not be the rule, since the ages in more than half these delayed menopausal cases were the early or middle thirties.

SEVERITY

Symptoms of the surgical menopause vary in considerable degree and are undoubtedly affected by many factors, particularly the nervous and psychic stability of the individual. As I show in a later table, the patients with normal hemoglobin are less likely to exhibit severe reactions than are patients with anemia.

I feel that this variation in the frequency of severe reactions in the two groups emphasizes the value of retaining normal ovaries. These severe reactions usually occasion the women great physical and mental distress, and are by no means of temporary duration, as shown in Table 6.

TABLE 6.—*Average Duration of Vasomotor Symptoms*

	Severe	Moderate	Average
Hysterectomy with removal of ovaries	3 yrs.	2.5 yrs.	2.7 yrs.
Hysterectomy with retention of ovaries	2.25 yrs.	2.25 yrs.	2.25 yrs.
Normal menopause		Approximately	2.5 yrs.

It is of interest to note that the average duration of vasomotor symptoms in the natural and in the surgical menopause is practically identical, which suggests that, in the majority of women with normal temperamental stability, the readjustment that ultimately occurs is not modified by the absence of the uterus and ovaries. The prolongation of these disturbances to from four to seven years in 11 per cent. of women with symptoms (thirty-eight cases) contradicts the assertion that these phenomena are transient. Nor are we able to support

the statement made by some that the menopausal symptoms are but manifestations of psychic or nervous upheavals that were the sequelae of unsatisfactory surgery. Evidence for our view is afforded by the fact that the preoperative complaints were relieved in more

TABLE 7.—*Relation of Age to Frequency of Vasomotor Symptoms*

Years	Hysterectomy With Removal of Ovaries Number of Cases	Hysterectomy With Removal of Ovaries Symptoms Per Cent.	Hysterectomy With Retention of Ovaries Number of Cases	Hysterectomy With Retention of Ovaries Symptoms Per Cent.
10–20	6	82	..	..
20–30	77	79	14	35
30–40	118	88	71	44
40–50	100	81	58	41
50–60	24	79	17	53
60 plus	4	25	11	16

than 95 per cent. of cases, and also because the normal and surgical menopause are of about the same average duration.

FACTORS THAT TEND TO MODIFY VASOMOTOR SYMPTOMS

Many of the women between the ages of 40 and 50 had irregular menses and were entering the normal climacteric; 10 per cent. of these women had developed preoperative menopausal disturbances. In the large majority of the women between the ages of 55 and 60 or more, menstruation had ceased and 50 per cent. had had preoperative symptoms. It is of interest to note the

TABLE 8.—*Relation of Hemoglobin to Frequency of Vasomotor Disturbances*

	Hemoglobin 70 Per Cent. and Above Symptoms Per Cent.	Hemoglobin Below 70 Per Cent. Symptoms Per Cent.
Hysterectomy with removal of ovaries	20	80
Hysterectomy with retention of ovaries	11	89

onset of disturbance in 25 per cent. of women of this age. The table indicates that, at any age, it is an advantage to the patient to retain the ovaries.

If we admit that the postoperative results might be closely related to the preoperative general resistance and health of the women, a study of the hemoglobin determination as an index of the physical condition is very striking.

The finding in Table 8 accords with the accepted idea that women of lowered preoperative physical standards, with their narrower margin of equilibrium, are very

TABLE 9.—*Relation of Preoperative Blood Pressure to Frequency of Symptoms*

	Normal* Blood Pressure With Symptoms Per Cent.	Hypertension† With Symptoms Per Cent.
Hysterectomy with removal of ovaries	78	82
Hysterectomy with retention of ovaries	40	44

* Systolic pressure up to 140 mm. of mercury.
† Systolic pressure above 140 mm. of mercury.

much more likely to be disturbed by any procedure than are women of normal physical equipment.

While there is a slight increase in frequency of postoperative symptoms in some women with hypertension, yet the difference is not striking. Unfortunately, our data did not include postoperative pulse pressure observations.

The average age in this group was 37 years. The table, while not conclusive, indicates that, in the presence of fibroids, there is a slight increase in the frequency, above the general average, of postoperative symptoms if the ovaries are removed. This suggests the possibility of some associated change, possibly toxic in nature, which tends to impair the compensatory mechanism of the individual or render the equilibrium more unstable.

The average age in this group was 30 years. No woman was operated on while the pelvic inflammation was acute. Surgical treatment was instituted only to correct the chronic residual pathologic result of the various types of pelvic infection.

The type of tissue retained has a bearing on symptoms, as shown by Table 12.

TABLE 10.—*Relation of Fibroids to Vasomotor Symptoms*

	Number of Cases	Symptoms Per Cent.	No Symptoms Per Cent.
Hysterectomy with removal of ovaries	108	88 (30% severe)	12
Hysterectomy with retention of ovaries	79	48 (11% severe)	52
Total	187		

In no instance have remnants of ovaries or glands buried in adhesions been preserved, for it was felt that such diseased tissue is a liability to the patient. Oophoritis of slight degree did not impair the ovarian function; sclerotic ovaries, indicative of senility, on the other hand, were definitely less effective in protecting the individual.

Postoperative vaginal atrophy was not of frequent occurrence in our patients. To lessen the possibility of contracture of the vagina, plastic work was rarely combined with hysterectomy. Atrophic changes were found in women with and without ovarian tissue in a frequency of 2 per cent. and 4.5 per cent., respectively.

TABLE 11.—*Relation of Pelvic Inflammatory Disease to Frequency of Vasomotor Symptoms*

	Number of Cases	Symptoms Present Per Cent.	Absent Per Cent.
Hysterectomy with removal of ovaries	165	76	24
Hysterectomy with retention of ovaries	29	56	44
Total	194		

VALUE OF CONSERVED TISSUE AND INCIDENCE OF DEGENERATION

The data obtained from our tabulations indicate that retention of ovarian tissue is a distinct advantage to the patient. Yet, before conclusions can be drawn, it is essential to determine whether or not the value of the tissue is counterbalanced by its tendency to cystic or neoplastic changes.

In 171 patients with conserved ovaries, the ovaries were subsequently found to be enlarged in only twelve. This was associated with pain in two cases. That this was a temporary condition, however, is shown by the spontaneous disappearance of pain and swelling within six months. We found no neoplastic degenerations, and there were no secondary operations in the entire series.

It has been suggested that if cystic degeneration is an indication of ovarian atrophy, the infrequency of

this finding in comparison with the frequency of vasomotor disturbances would indicate that the endometrium is the controlling factor in these disturbances. We do not agree with this statement, however, for the close similarity in frequency of disturbances of the normal menopause and surgical menopause with retained ovaries indicates that the absence of the endometrium does not materially affect the issue. While it is apparent that the ovaries may cease to function after a short period, yet the slow atrophy of the glands and the gradual withdrawal of the secretion permit a smoother metabolic adjustment.

It is logical to assume that the fate of the retained ovary is intimately associated with its blood supply; therefore, we have rarely removed a tube and saved the corresponding ovary, because such a procedure would jeopardize the circulation. Salpingectomy was done eighteen times, with retention of ovarian tissue. The series is too small to be of any value.

OVARIAN THERAPY

It has been a routine to give ovarian therapy by mouth within two weeks after operation and to continue the administration for the duration of the menopausal disorders, because the value of the therapeutic principle involved was recognized. It is difficult to draw conclusions as to the value of this agent in the treatment of the vasomotor phenomena associated with the menopause because the symptoms are entirely subjective and vary

TABLE 12.—*Relation of Type of Retained Ovary to Vasomotor Disturbances*

	Number of Cases	Disturbance Per Cent.	No Disturbance Per Cent.
Normal ovaries	109	31	69
Ovaries with adhesions...	33	32	68
Sclerotic ovaries	29	63	37

in different individuals, and data as obtained do not permit of statistical tabulation. If we assume the presence of a therapeutic principle in the gland, however, it would seem logical, especially when both ovaries have been removed, to supply this principle in an effort to control the disturbances resulting from the loss of ovarian influence. The whole gland has usually been prescribed, for, in the absence of definite standardization and identification of the essential principles, it was considered more rational to administer the whole gland than any of its parts. Various preparations of corpus luteum and ovarian residue have been given, in the absence of control of vasomotor disturbances by the whole gland, with no conclusive effects as to their superiority. More than 80 per cent. of women with total ablation, despite gland therapy, developed functional disturbances. However, it is my impression that frequently these symptoms were alleviated and controlled by the extract, as shown by an increase of the symptoms following withdrawal of therapy.

CONCLUSIONS

If we accept the normal menopause as a control, my analysis indicates that:

1. The frequency of vasomotor symptoms after hysterectomy is increased when both ovaries are removed.

2. The frequency of symptoms with conserved ovaries after hysterectomy compares favorably with that of the normal menopause.

3. Severe vasomotor symptoms are more common without than with ovaries.

4. The onset of delayed symptoms indicates that a definite number of conserved ovaries will atrophy within a year after operation.

5. The average duration of symptoms of the normal and surgical menopause is about two and one-half years.

6. Women with low hemoglobin are more likely to develop postoperative disturbances.

7. The frequency of symptoms depends in large measure on the type of tissue retained.

8. Retained healthy ovaries are not susceptible to degeneration.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. PHANEUF AND MAXWELL

DR. EMIL RIES, Chicago: The results reported by Dr. Maxwell are not greatly different from what we have believed for many years. We considered it a rule not to remove healthy ovaries. The necessity of operating subsequently on those ovaries has not been evident. Dr. Phaneuf's paper brings up interesting questions. For instance, he reports cases in which the tumor ruptured during or soon after examination. A few years ago, I reported a type of tumor that I designated alternating, periodic swellings of the ovary that were enlargements of the ovary due to a pathologic condition of the corpus luteum, speaking in general terms. These tumors are liable to break under the hand of the examiner, and are liable to give him quite a little palpitation of the heart for a while. They are not usually associated with the collapse symptoms which Dr. Phaneuf described for hemorrhage, because there is usually no hemorrhage from them. The cases that Dr. Phaneuf described have hemorrhage, and therefore manifest the symptoms of internal hemorrhage. There are a good many cases in which a diagnosis of these internal hemorrhages could be made more easily by puncturing the culdesac. Dr. Phaneuf did not mention that because evidently, in most cases, there was no question in the operators' mind as to whether there was any internal hemorrhage or not. I do not know that, practically, it matters much whether we have to operate for acute appendicitis or for ruptured ovarian cyst. But as a matter of scientific interest, it is quite important. The rupture of these cysts is interesting further with regard to the relation of menstruation to the corpus luteum. The more we know and the more we experiment about the function of the corpus luteum, the more chaotic the condition becomes. What we were taught by the Born-Fraenkel theory years ago is shaken on every point. We know less about it today than we did ten years ago because we know so much more. It is very important to bring such problems before a meeting like this, because it stimulates all of us if we meet such a case to take a very careful history of the type of menstruation before and after the rupture; and the greater the number of such cases published, the more we shall learn about this important function of the corpus luteum.

DR. CAREY CULBERTSON, Chicago: The diagnosis of ectopic pregnancy, for instance, is not as satisfactory as diagnosis goes in general practice. Dr. Phaneuf's paper is of value in the diagnosis of this pathologic entity. Regarding Dr. Maxwell's paper, there are, as I see it, two distinct tests, clinically, of ovarian efficiency in the normal situation: one is pregnancy; the other is menstruation. We eliminate those two by the ablation of the uterus, and what test of ovarian efficiency have we left? We have left the question as to whether or not the patient develops climacteric symptoms. Any one who has studied menopause cases intensively must realize that there is nothing more protean in its manifestations than the climacterium. Some women have no symptoms at all; some show a moderate reaction; some, a marked reaction. Some, perhaps the majority, develop vasomotor disturbance, and others have just as definite climacteric symptoms hypotonic in type and without vasomotor disturbance. If we take up the study of such cases as Dr. Maxwell has after hysterectomy, we have nothing much to go on, as far as the efficiency of the ovary is concerned, except these symptoms; hence any such study must be more or less imperfect. As a matter of fact, the

vasomotor symptoms are the ones that are recognized universally as evidences that the ovaries are deficient. Aside from this, it is extremely difficult to say from a study of the symptoms the patients exhibit, whether they mean ovarian efficiency or not. This report brings out certain opinions that I have arrived at from my own work. I was particularly interested to note that there was a relative absence of cystic degeneration of the ovaries left behind after hysterectomy. We have been told by clinicians that the ovaries should not be left behind because they will undergo cystic degeneration and produce symptoms that will necessitate another operation. That has not been my finding at all. I have been one of those who has advocated ovarian conservation, certainly in young women and at times in older patients. There are two things about the situation that should obtain when we preserve the ovaries. Dr. Maxwell said that the most important thing is the condition of the ovary, that the diseased ovary should be ablated, and the good one left. The other important thing is the vascularization of the ovary that is left behind. If the vascularization of the ovary cannot be preserved, it is better to remove it. For this reason, I have not made it a rule to take the ovary out and transplant it elsewhere, but have preferred to leave it in situ with its normal blood supply. If it has any chance to function, it can do this best with its own blood supply in its normal situation in the pelvis.

DR. EMIL NOVAK, Baltimore: When a surgeon finds a woman's abdomen full of blood, his first thought is of a ruptured extra-uterine pregnancy, and almost always this assumption is correct. Occasionally, however, the bleeding is due to other causes, such as the one that Dr. Phaneuf has discussed. The ovary is more frequently the seat of hemorrhages within its substance than any other organ in the body, and it is, therefore, surprising that abdominal hemorrhage of ovarian origin is not more frequent than it is. Just as the endometrium is the source of a physiologic type of hemorrhage, i. e., menstruation, so we find that at a certain phase of its cycle—the vascularization stage—the corpus luetum gives rise to a physiologic hemorrhage. At times, this is abnormally great, and may even break through into the abdominal cavity. A considerable number of cases arise from follicular cysts. In a study of ovarian hematomas that I made some years ago, I found that the bleeding in the common follicular hematoma arises from blood vessels surrounding each follicle—the subgranulosal vascular wreath, as we termed it. The blood breaks through the wall of the follicle into its cavity. It may, however, just as readily break through into the abdomen. This is especially likely under the influence of traumatism, such as rough bimanual examination.

DR. ARTHUR H. CURTIS, Chicago: In those instances in which ovarian conservation has been practiced, has Dr. Maxwell noted any difference in menopause symptoms in patients who have been subjected to supravaginal hysterectomy as contrasted with complete hysterectomy?

DR. HENRY T. BYFORD, Chicago: In order to understand the second paper more thoroughly, we ought to know how often these symptoms occur in normal women. In the women members of my family and many others under continuous observation, there have been no symptoms of the menopause. If we knew whether or not normal symptoms occur more often before than they do after operation, and whether they were more severe, or less severe in proportion to the normal condition, we should have a better understanding of the paper.

DR. L. E. PHANEUF, Boston: I want to emphasize the point made by Dr. Ries regarding vaginal puncture. Out of seven cases seen within a year, there were two cases of collapse with severe hemorrhage. In these two cases, puncture would not have been necessary because the abdomen contained a great deal of blood. Operation was necessary, and vaginal puncture would not have helped very much as far as the result was concerned, but it might have helped in making the diagnosis. The second case with massive hemorrhage occurred in a physician, living seventy-five miles from Boston, who had made her own diagnosis of ovarian cyst with twisted pedicle and called me on the telephone asking me to come and operate. She was also seen by a surgeon who made a diagnosis of appendical abscess. This woman had half a liter of blood in the abdomen. In the other cases, my own and those found in the literature, hemorrhage was not suspected, and they were diagnosed as cases of appendicitis. There, vaginal puncture would have been of great help in settling the diagnosis.

DR. ALICE MAXWELL, San Francisco: I should like to assure Dr. Ries that we have arrived at our conclusions in every case by repeated physical examinations as well as by questionnaires that tabulated subjective symptoms. An explanation of the absence of menopausal disturbances in the doctor's two relatives is afforded by repetition of the frequency of these symptoms in normal women; namely, 50 per cent. His relatives are undoubtedly in the fortunate group of those who are symptom free. We have recognized the importance of the ovarian circulation in relation to the maintenance of ovarian function, and if the pathologic change in the tube was so extensive as to require salpingectomy, we practically never conserved the corresponding ovary because of the damage to its blood supply. We have also made every effort to support the retained ovary so as to avoid twisting the blood vessels. In answer to Dr. Curtis's question, I should say that we have found no difference in the frequency of vaginal atrophic changes or vasomotor disturbance after panhysterectomy or supravaginal removals, although the statement is frequently made that circulatory changes are more marked in the former than in the latter.

TREATMENT OF NEPHRITIS AND EDEMA WITH CALCIUM *

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The action of calcium salts in the organism has been widely discussed, a debatable point being whether or not diuresis occurs after their ingestion. In 1911, Meyer and Cohn [1] found that a certain amount of calcium chlorid added to the food of infants caused a decrease in weight, due to loss of water. They stressed the importance of using a comparatively large amount of calcium chlorid if loss of water was to be produced. On the basis of these observations, Schultz,[2] in 1918, gave doses of 10 gm. of calcium chlorid daily to patients suffering from war nephritis, and in several cases prompt diuresis and disappearance of edema occurred. In 1922, Blum [3] reported like results in similar cases, but he found also that with the disappearance of the edema there was a large output of sodium in the urine. As it is known that sodium salts cause retention of fluid in the body, this finding convinced him that sodium was the important substance in the causation of edema and must necessarily be eliminated with the subsidence of the edema.

A year later, Atchley, Loeb and Benedict [4] studied the electrolytic partition in the blood and urine of a normal man following calcium chlorid ingestion. They noted increased excretion of water, sodium, total acids, chlorin and ammonia in the urine. At the same time, Haldane, Hill and Luck [5] published results showing that

* From the division of medicine, Mayo Clinic.
* Read before the Section on Pharmacology and Therapeutics at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

1. Meyer, L. F., and Cohn, S.: Klinische Beobachtungen und Stoffwechsel Versuche über die Wirkung verschiedener Salze beim Säugling, Ztschr. f. Kinderh. **2**: 360-419, 1911.
2. Schultz, E.: Klinische Beobachtungen über Nierenentzündung bei Kriegsteilnehmern, Ztschr. f. klin. Med. **86**: 111-138, 1918.
3. Blum, L.; Aubel, E., and Hausknecht, R.: L'action diurétique des sels de calcium dans la néphrite avec oedemes, Bull. et mém. Soc. méd. d. hôp. de Paris **46**: 206-214 (Feb. 3) 1922.
4. Atchley, D. W.; Loeb, R. F., and Benedict, E. M.: Physicochemical Studies of Calcium Chlorid Diuresis, J. A. M. A. **80**: 1643-1644 (June 2) 1923.
5. Haldane, J. B. S.; Hill, R., and Luck, J. M.: Calcium Chloride Acidosis, J. Physiol. **57**: 301-306 (June) 1923.

the diuresis produced by calcium chlorid in a normal man was accompanied by an acidosis, which was indicated by a lowered alveolar carbon dioxid tension and increased urinary excretion of acid and ammonia.

In a recent paper, Rockwood and Barrier [6] of our service confirmed the results obtained by Schultz and Blum in the treatment of nephritis and nephrosis, and further demonstrated that calcium chlorid was efficacious in many cases in which calcium lactate failed to produce diuresis. We shall discuss here results obtained in two cases in which the balance of certain of the inorganic ions was determined.

TABLE 1.—*Findings in Blood, Urine, Feces and Edema Fluid*

	Blood Serum, Mg. for Each 100 C.c.					Dioxid, Plasma, per Cent. by Volume	Urine, Total Milligrams						Hydrogen-ion Concentration	Feces, Total Milligrams				Edema Fluid, Mg. for Each 100 C.c.				
Date	Chlorids	Sodium	Potassium	Calcium	Magnesium	Carbon	Volume, C.c.	Chlorin	Sodium	Calcium	Magnesium	Potassium		Sodium	Calcium	Potassium	Magnesium	Chlorin	Sodium	Potassium	Calcium	Magnesium
22/10/23	360	316	29	8.6	4	42	.....	.....	.....	.....	.....	.....	7.6	...	.....	...	...	407*	232*	17*	6 *	1.9*
1/ 6/24	...	...	.....	...	...	..	.....	.....	.....	.....	.....	.....	...	...	.....	...	...	...	...	..	...	...
1/ 8/24	...	...	.....	...	...	..	700	798	1,054	10.5	8.4	1,613	...	76	498	227	124	...	...	..	...	...
1/ 9/24	...	...	.....	...	...	..	1,300	1,560	1,820	11.7	15.6	1,820	...	158	509	589	205	...	...	..	...	...
1/13/24	...	...	.....	...	...	..	1,500	6,840	2,439	64.0	70.0	2,347	4.6	243	1,062	532	177	...	...	..	...	...
1/14/24	...	...	.....	...	...	..	2,200	9,780	2,860	50.0	29.0	.....	4.6	217	2,013	613	611	...	...	..	...	...
1/15/24	...	...	.....	...	...	..	2,200	10,800	3,449	110.0	29.0	2,681	4.6	296	948	342	139	...	...	..	...	...
1/16/24	386	329	18.8	9.8	1.9	45	.....	.....	.....	.....	.....	.....	...	...	.....	...	...	411	325	15	7.5	1.98

* Ascitic fluid.

REPORT OF CASES

CASE 1.—*History.*—A man, aged 22, a surface-mine laborer, came to the Mayo Clinic, Nov. 28, 1923, complaining of extreme generalized edema, which had begun nine months before. His only other illnesses had been measles in 1915 and influenza in 1918, from both of which he had completely recovered. Nine months before, he had caught cold and was confined to bed. On the fifth day, severe pain developed in the left lower quadrant and radiated around to the left renal area, lasting two days. A week later, after the patient was up and around, puffiness under the eyes and swelling of the feet were noted; this was followed by increasing generalized edema, which was partially relieved by hospitalization, but became marked when he returned home. In May, he went to another hospital, where, shortly after going to bed, he had a convulsion and was unconscious for three days. Abdominal paracentesis was performed. The edema, in spite of vigorous treatment, was not relieved, but increased until the patient came to the Mayo Clinic.

The patient's skin was waxy white and all parts of his body were edematous. The abdomen and scrotum contained so much fluid that he was unable to stand; there was also a large quantity of fluid in both pleural cavities. His weight was 92.7 kg.; in health he weighed 72.7 kg. The heart was moderately enlarged and there was an accentuated aortic second sound. The systolic blood pressure was 205 and the diastolic 125; the pulse rate was 72. There was a low grade edema of the disks and retinas with scattered exudates, but no hemorrhages. A twenty-four hour specimen of urine measured 500 c.c.; the specific gravity was 1.020; albumin, 3; many hyaline and granular casts and a few pus cells were present, but no erythrocytes. The two-hour phenolsulphonephthalein return was 25 per cent.; the blood urea was 56; creatinin, 2, and hemoglobin (Dare) 60 per cent., with 3,160,000 erythrocytes and 9,800 leukocytes. The total serum protein was 4.9 gm., the globulin and albumin being 29 per cent. and 71 per cent., respectively. At the time of the patient's dismissal he was free from edema; the systolic blood pressure had dropped to 140, and the diastolic to 90; the blood urea, creatinin, and carbon dioxid combining power were normal and the two-hour phenolsulphonephthalein return had risen to 80 per cent. The hemoglobin (Dare) was 65 per cent., and the erythrocytes numbered 3,840,000. A diagnosis was made of subacute glomerular nephritis.

The patient returned for reexamination four months later, June 4. He had remained free from edema and had gained in health and strength. He appeared strong and healthy in every way. He weighed 70 kg., without edema. The systolic blood pressure was 140 and the diastolic 80. The eyegrounds were greatly improved, the only lesion being a few small exudates of the absorbing edema type in the left fundus. The erythrocytes numbered 3,600,000; the hemoglobin (Dare) was 65 per cent. The urine contained: albumin, 2; numerous casts, and a few erythrocytes and leukocytes. The blood urea and creatinin were 43 and 1.8 mg., respectively. The phenolsulphonephthalein excretion was 45 per cent. in two hours.

Treatment and Course.—During the first eleven days in the hospital, the patient was purged, having as many as six stools a day, and he was sweated vigorously. His weight decreased 2.2 kg., and the urine never exceeded 500 c.c. For the next seven days he was given 18 gm. of calcium chlorid daily. There was no decrease in weight, but the urine reached 900 c.c. a day. While the urinary output nearly doubled, it was not a diuresis, but as purgation had been brisk, the calcium chlorid may have passed largely unabsorbed (Chart 1). At the end of the seven days, 8,000 c.c. of fluid was drawn from the abdomen, thereby reducing the weight to 80.4 kg. The calcium was discontinued for four days, then given for ten days, during which period there was a loss in weight of 3.6 kg., and the daily urinary output reached 1,700 c.c., the fluid intake being 600 c.c. plus the fluid contained in a diet of 1,500 calories. Enemas were substituted for the purgatives, but were found unnecessary and discontinued. Because of the drop in the carbon dioxid combining power of the blood to 36 per cent., alkali was given, and as soon as the urine became alkaline, the urinary output fell to 650 c.c. and the weight was stationary. Nine days after the discontinuance of the calcium chlorid, it was begun again, 10 gm. daily being given. For a control period of two days before and during the calcium regimen, the patient was put on a carefully weighed diet of 1,500 calories, containing 40 gm. of protein and 800 c.c. of water;

TABLE 2.—*Findings in Blood, Urine and Feces*

	Dioxid,	Blood Serum, Mg. for Each 100 C.c.			Urine, Total Milligrams					Feces, Total Milligrams	
Date, 1924	Carbon Plasma, per Cent. by Volume	Sodium Chlorin	Sodium	Calcium	Volume, C.c.	Chlorin	Sodium	Calcium	Ammonia	Hydrogen-ion Concentration	Calcium	Sodium
2/22	..	...	...	...	750	2,970	1,239	13.5	330	6.7	.....	.....
2/23	..	...	...	...	2,050	6,560	4,025	45.1	577	7.3	2,214	3,141
2/24	..	...	...	...	1,250	3,750	2,000	30.0	221	7.7	.....	.....
2/25	52	377	334	9.5	550	1,818	1,130	10.4	131	6.9	.....	.....
2/26	..	...	...	...	1,450	9,540	5,497	152.3	783	6.4	.....	.....
2/27	..	...	...	...	1,700	10,620	3,902	299.2	714	5.4	5,400	5,350
2/28	..	...	...	...	1,100	7,260	2,207	367.3	862	5.9	.....	.....
2/29	55	378	291	8.5	850	5,814	1,476	240.6	630	5.0	.....	.....

and was given in addition 1 gm. of calcium as calcium chlorid. The urine was collected in two-hour specimens, and the blood was drawn at the end of each period. The results are shown in Table 2. The calcium balance was positive, 2.2 gm. being retained. The blood calcium remained practically unchanged, and the carbon dioxid combining power of the blood rose to 55 per cent. The patient was discharged March 1, 1924, and has remained well since.

6. Rockwood, Reed; and Barrier, C. W.: Calcium Treatment for Edema, Arch. Int. Med. **33**: 643-657 (May) 1924.

600 c.c. additional fluid was also allowed. In this diet, the content of calcium, magnesium, potassium, sodium, phosphorus and chlorin was calculated according to Sherman's figures.[7] The treatment with calcium chlorid was continued for nine days, and for this period the loss in weight was 9.6 kg., the urine rising to 2,200 c.c. in twenty-four hours. The inorganic balance was determined for the last three days of this period

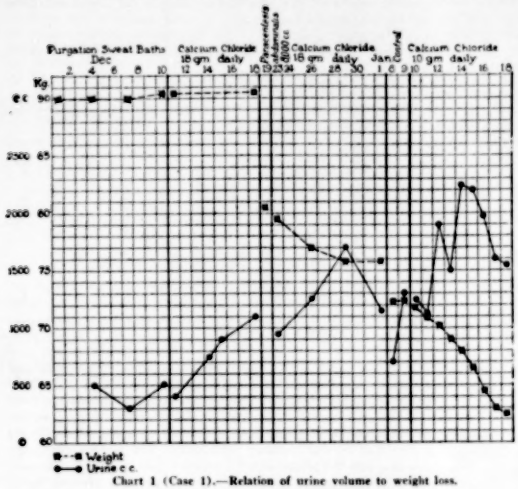

Chart 1 (Case 1).—Relation of urine volume to weight loss.

(Table 3). After the discontinuance of the calcium, the urine decreased somewhat in amount, but remained highly acid. The loss in weight with gain in strength continued slowly, in spite of a high caloric diet, so that at the end of sixty-five days the patient weighed 55.4 kg., as against 92.7 on admission.

CASE 2.—*History.*—A woman, aged 21, came to the Mayo Clinic, Feb. 18, 1924, because of generalized edema. Except for tonsillitis, she had had no illnesses other than the edema, which had begun after an attack of diphtheria seven years before, accompanied by trouble with the vision and the urinary findings of acute nephritis. Since then, albumin had been present in the urine; the edema had subsided, but returned a number of times to subside again with diet, rest and sweating. The edema, on admission, was greater than on previous occasions and had been present for several weeks.

The patient's face was puffy about the eyes, and the skin of the whole body was edematous, this condition being most marked in the lower part of the legs, over the sacrum, the inner surface of the thighs, and the anterior wall of the chest. There was no evidence of fluid in any of the serous cavities. Her weight was 77.7 kg.; in health it was 71.8 kg. The eyegrounds were normal; the tonsils were large and septic in appearance, and the heart was enlarged to the left. The systolic blood pressure was 140 and the diastolic 110. The specific gravity of the urine was 1.027, and it contained albumin 4, numerous casts, and a few pus cells, but no erythrocytes. The hemoglobin (Dare) was 76 per cent.; the erythrocytes numbered 4,600,000, and the leukocytes 7,500; the blood urea was 16 mg., and the blood creatinin 1.2 mg. for each 100 c.c. A diagnosis was made of subacute nephrosis. After eight days of treatment in the hospital, the patient's weight decreased 8.6 kg.; she was then free from edema, save for slight pitting over the lower part of the tibias. At this time, the two-hour phenolsulphonephthalein return was 75 per cent., and the renal function was normal save for albumin and casts. Tonsillectomy was then performed. A letter from the patient three months after her dismissal states that there is no edema, and that her weight is 68.2 kg.

Treatment and Course.—The second day in the hospital, the patient was placed on a weighed diet of 1,500 calories, containing 40 gm. of protein, 800 c.c. of water, and as little salt as was possible. She was allowed an additional 600 c.c. of fluid, and was kept on this diet for four days as a control, during which time she lost 3.1 kg., and the output of urine rose rapidly, but subsequently declined until, on the fourth day, it amounted to only 550 c.c. She was then given 10 gm. of calcium chlorid for four days. There was a sustained diuresis with a loss of 4.1 kg. in weight, which brought her to her normal weight and freed her from edema, save for a slight pitting over the lower end of the tibias (Chart 2).

COMMENT

At the time these two patients were observed, they presented marked general edema. Their conditions had been diagnosed clinically as subacute glomerular nephritis and subacute nephrosis, respectively. Both had ultimately a very satisfactory diuresis produced by calcium chlorid. In Case 1, the edema was very resistant to other reduction methods, and did not yield even to calcium at the first trial. In Case 2, the edema was reduced satisfactorily, at first without administering calcium chlorid, but within three days the diuresis had definitely slackened. At this time, the calcium was started, apparently greatly shortening the period of edema, as the disappearance of the edema was accelerated. At the end of the diuresis, both patients were much below their normal weights and both had normal renal function; the two-hour phenolsulphonephthalein output in Case 1 was 80 per cent., and in Case 2, 75 per cent., but albumin and casts were still present in the urine and the specific gravity was relatively high.

TABLE 3.—*Analyses Showing Inorganic Balance*

	Calcium, Mg.	Chlorin, Mg.	Sodium, Mg.	Potassium, Mg.	Magnesium, Mg.	Water, C.c.	Loss of Weight, Kg.
Two days control:							
Intake:							
Diet	560	694	740	5,156	413	2,800	..
Medication	.....	.....	.....	.....	.....	.....	..
Total	560	694	740	5,156	413		
Output:							
Urine	22	2,390	2,874	3,433	24	2,000	..
Feces	918	.....	234	916	329	.....	..
Total	940	2,390	3,108	4,349	353	.....	1
Balance	−380	−1,696	−2,368	+810	+60		
Three days on calcium chlorid, 10 gm. daily:							
Intake:							
Diet	811	1,054	864	7,559	636	4,200	..
Medication	11,070	18,930	.....	.....	.....	.....	..
Total	11,881	19,984	864	7,559	636		
Output:							
Urine	233	27,480	8,782	5,031*	129	5,000	..
Feces	4,923	708	758	1,387	880	.....	..
Total	5,156	28,188	9,541	6,418	1,009	.....	4.5
Balance	+6,725	−8,204	−8,677	+1,141	−372		

* Two days.

In Table 1 are noted the findings of the inorganic constituents in the blood serum, the carbon dioxid com-

7. Obviously, these figures are not as accurate as if the food had been analyzed. However, the inaccuracies are too small to affect the general results.

bining power of the plasma, the volume and hydrogen-ion concentration of the urine, and the inorganic ions in the urine, feces, ascitic fluid and edematous fluid in Case 1 during a control period of two days, during which the patient was on a weighed diet of 1,500 calories, containing 40 gm. of protein and 1,400 c.c. of fluid, and during a test period of three days on the same diet plus 10 gm. of calcium chlorid daily, given

TABLE 4.—*Analyses Showing Inorganic Balance*

	Calcium, Mg.	Chlorin, Mg.	Sodium, Mg.	Water, C.c.	Loss of Weight, Kg.
Four days control:					
Intake:					
Diet	1,150	1,308	1,443	5,000	.....
Medication	.....	.....	.....	.....	.....
Total	1,150	1,308	1,443		
Output:					
Urine	99	15,008	8,844	4,000	.....
Feces	2,214	.....	2,143	.....	.....
Total	2,313	15,008	11,987	.....	3.2
Balance	−1,163	−13,800	−10,494		
Four days on calcium chlorid, 10 gm. daily:					
Intake:					
Diet	1,216	1,878	1,527	5,000	.....
Medication	14,709	25,240	.....	.....	.....
Total	15,976	27,068	1,527		
Output:					
Urine	959	32,894	13,081	5,100	.....
Feces	5,400	.....	5,350	.....	.....
Total	6,359	32,894	18,431	.....	5.2
Balance	+9,615	−6,829	−16,904		

by mouth. In Table 2 are noted the same findings for Case 2, except that both control and test periods are for four days. In this diet, the inorganic ions were calculated according to Sherman's[8] values. In Table 3 are noted the balance of inorganic ions, the amount of water in the diet and in the urine, and the loss in weight for the control and test periods in Case 1. In Table 4 the same data are given for Case 2.

After calcium ingestion, the only change noted in the inorganic cations of the blood serum was a moderate decrease of sodium in the second case. In neither case did calcium chlorid alter the carbon dioxid combining power of the blood plasma, although the hydrogen-ion concentration of the urine dropped in Case 1 from 7.6 to 4.6, and in Case 2 from 6.7 to 5. There was an excess excretion of ammonium during the treatment with calcium chlorid. In both cases, during the control period, there were negative balances for calcium, chlorin and sodium. This negative balance for chlorin and sodium was much more marked in Case 2 than in Case 1, and in neither was there a proper proportion between the chlorin and the sodium ions, if calculated as sodium chlorid. The sodium was in excess, and was probably excreted as a salt of some other acid. In Case 1, in the control period, there was a positive balance of potassium, which was due in part to the fact that this was the only ion present in the diet in adequate amounts. In the test periods in both cases, when calcium chlorid was given, there was a positive calcium balance, 6.7 gm. in Case 1, and 9.6 gm. in Case 2. The negative balance of chlorin was increased from 1.6 gm. in the control period to 8.2 gm. in the calcium period in Case 1, and, while there was still a large negative balance for chlorin in Case 2, it was decreased from 13.8 to 6.8 gm. The negative sodium balance in Case 1 was increased from 2.36 to 8.67 gm., while in Case 2 there was an increase of from 10.4 to 16.9 gm. The loss of water through the kidneys increased in both cases when calcium chlorid was given, but the resulting diuresis was not sufficient to account for the actual loss of weight. This was evidently due to increased loss of water by other channels, such as the skin, lungs and bowel. We have noted that, while calcium is being given, any tendency to constipation is relieved, and also that this effect continues long after its exhibition has ceased. These facts would indicate that, on administration of calcium chlorid, water is more readily available for excretion. After the ingestion of calcium chlorid, the calcium and sodium content of the feces is increased.

After calcium chlorid has been given, there is a positive balance of calcium and a negative of chlorin and sodium. There is increased excretion of ammonium. The hydrogen-ion concentration of the urine is lowered; the urinary output increased, and the loss of weight is out of proportion to the loss of water through the kidneys. The carbon dioxid of the plasma was not changed, although in Case 1, when calcium chlorid had been given for a longer period, the carbon dioxid of the plasma was lowered. The foregoing is in essential agreement with the results of Haldane, Hill, Luck and Atchley, Loeb and Benedict.

ACTION OF CALCIUM CHLORID

Blum and his co-workers have explained the diuretic action of calcium chlorid by its effect on retained sodium. They believe edema is due to sodium retention. Calcium, as well as potassium, provokes a loss of sodium, which carries with it water. The loss of sodium is due to the antagonism between the cations; no importance is attributed to the anion chlorin. They emphasize the fact that calcium chlorid has a greater diuretic effect when all sodium salts are withheld. In our cases, there was a large sodium loss, both by kidneys and bowel, with a retention of calcium. The fact that Atchley, Loeb and Benedict found sodium retention after a calcium chlorid diuresis emphasizes the importance of calcium chlorid in removing sodium from the organism. From the evidence at hand, it seems logical to assume that after the ingestion of calcium chlorid, the calcium is eliminated by the bowel, while the chlorin is absorbed, becomes attached to the retained sodium, and passes into the urine, allowing the escape of water.

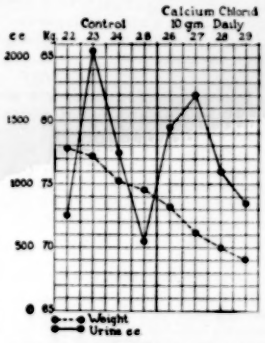

Chart 2 (Case 2). — Relation of urine volume to weight loss.

Hülse[9] interprets the discharge of edema fluids as being due to the diminution in the water-binding power of colloids, which is caused by the bivalent cation calcium. The bivalency at least would not explain the diuresis of almost similar type produced by potassium and ammonium chlorid.

8. Sherman, H. C.: Food Products, New York, the Macmillan Company, 1921.

9. Hülse, W.: Ueber den Einfluss der Kalksalze auf Hydrops und Nephritis, Zentralbl. f. inn. Med. 41: 441-454 (June 19) 1920.

Haldane and his co-workers, in studies of the acidosis of calcium chlorid origin, noted the diuresis, the fall in the alveolar carbon dioxid, the increased excretion of sodium, ammonium, and the total acids of the urine, with a reduction in its hydrogen-ion concentration. Calcium chlorid is an acid salt, and when taken by mouth, the calcium passes through the bowel as calcium carbonate, and the chlorin is absorbed as hydrochloric acid, producing acidosis. These observers offer the theoretical explanation that the diuresis is due to the acidity whereby the blood and tissue proteins are brought nearer the iso-electric point, releasing cations held in Donnan equilibrium, diminishing osmotic pressure, and causing loss of water. On this basis, they predicted a similar diuretic action for ammonium chlorid as the ammonia is converted to urea, liberating the chlorin as hydrochloric acid.[10] We are now treating a case of marked nephrotic edema with ammonium chlorid. The diuresis and loss of weight have been very satisfactory, and the blood and urinary findings of acidosis are quite similar to those in the cases in which calcium was used. The carbon dioxid combining power of the plasma has dropped to 25 per cent., and the hydrogen-ion concentration of the urine has fallen from 7.2 to 5.0.

The action of calcium and ammonium chlorid as diuretics, in cases of nephritis with edema, may be due in part to a change in the acid-base equilibrium of the body, causing the tissues to liberate water for excretion by the kidney, or causing a change in the damaged kidney so as to permit the excretion of water and salts. That acidosis is not the only cause for starting diuresis is indicated by the presence of acidosis with oliguria for a considerable period in Case 1 of this series, and in certain cases of war nephritis reported by Keith and Thomson.[11] The antagonistic action of the individual cations and a possible specific dehydration effect must receive due consideration.

It is evident that, in the edema of nephritis, the administration of such salts as calcium chlorid and ammonium chlorid leads to a separation of the cation and the anion within the organism. With the ingestion of either, sodium may be discharged from the body in large amounts.

SUMMARY

In two cases of nephritis with edema, calcium chlorid caused diuresis and loss of edema. A study of inorganic ions during the diuresis shows a positive balance of calcium and a negative balance of chlorin and sodium. When calcium chlorid is ingested, calcium is eliminated by the bowel, and chlorin by the kidney. In certain cases, sodium is discharged in large amounts and water is made available for elimination, and is excreted.

ABSTRACT OF DISCUSSION

DR. PAUL D. WHITE, Boston: In the last year at the Massachusetts General Hospital, we have treated but one case of nephritis with edema, and that without success. Our first case treated with calcium chlorid was about a year ago, a patient with very severe heart disease and obstinate edema. After other diuretics had failed to have any effect, the administration of calcium chlorid caused a satisfactory diuresis, and undoubtedly prolonged life for several months. Last fall, Dr. Harold Segall began an investigation on the effect of calcium chlorid. He found that he was able to produce diuresis in cardiac cases with or without edema, particularly when the patients were in bed and controlled with digitalis as indicated. We found no change in the rate or depression of the T wave in the electrocardiograms of patients with normal rhythm, auricular fibrillation or flutter, following the administration of calcium chlorid. It is known that digitalis will depress the T wave in the electrocardiogram. We tried calcium chlorid in a few cases of pleurisy with effusion, and were unable to produce results.

DR. L. G. ROWNTREE, Rochester, Minn.: What impressed me the most in regard to the value of calcium was that it was most effective in cases in which other procedures failed. I have watched these cases in Dr. Keith's service. The effects have been very striking. The types of edema that are often the most resistant to treatment yielded readily in several instances. Not all varieties of edema are the same, so far as blood volume is concerned. The usual conception of edema involves hydremic plethora. Dr. G. E. Brown and I have studied blood volumes in various types of edema and have found that the edema of chronic diffuse glomerular nephritis is associated with a small blood volume rather than a large one. Anemia is also usually present. The work of Keith and Barrier indicates that an excessive calcium administration robs the body of sodium. The control of sodium is more important in edema than the control of chlorids. This study is opening up some new vistas in the picture of edema. From what I have seen personally, I would predict that calcium is going to play an important rôle in the treatment of edema. Perhaps Dr. Keith will outline more definitely the treatment, particularly in regard to the preparation used, dosage, and method of administration.

DR. C. W. GREENE, Columbia, Mo.: Among the agents that have recently come to the front is calcium. It is very gratifying to see pathologists use the drugs that have been advocated by pharmacologists.

DR. NORMAN KEITH, Rochester, Minn.: In regard to the daily dose of calcium chlorid, we have found 10 gm. usually effective, though in a certain number of cases we used 18 gm. In going over the literature carefully, I found that there are now about twenty cases of authentic nephritis with edema that have responded to medication by calcium chlorid in this remarkable way. I know of no case in which ammonium chlorid was given and diuresis was produced except the one I quoted. I might say that in every case the hydrogen ion content of the urine does increase, as I showed in these tables. In some cases, we had spontaneous diuresis, as I showed. We do not know what is the spark that started this marked diuresis, but it does occur in cases in which the patients are getting a small intake of fluid and salt and no drugs. In these cases there was no change in the hydrogen ion concentration in the urine, which is like the diuresis that one gets after a large ingestion of water. This, I think, is of interest. On the other hand, after calcium chlorid we get this change in the hydrogen ion concentration with increased excretion of sodium. In response to Dr. Rowntree's request, we find it difficult to give calcium chorid in solution. Blum and others who have used it have always given it in from 10 to 20 per cent. solution. We found it much more satisfactory in capsules. The patient had no trouble in taking it, and I think that we induced diarrhea in only one case. It is interesting in this connection that ammonium chlorid is more easily taken than calcium chlorid, and it is possible that ammonium chlorid may be more easily taken and perhaps become of more general use than calcium chlorid.

10. Haldane, J. B. S.: Experiments on the Regulation of the Blood's Alkalinity, II, J. Physiol. **55**: 265-275 (Aug.) 1921.
11. Keith, N. M., and Thomson, W. W. D.: War Nephritis; A Clinical, Functional and Pathological Study, Quart. J. Med. **11**: 229-266 (April) 1918.

Outpatient Department in Health Program.—The outpatient department is important in the health program because it sees patients in the early or incipient stages of disease. This is the stage in which, from the health point of view, it is most important for patients to be under medical observation. This is the time when treatment is most conclusive of results. It enables one to prevent the spreading of infection to others, as in typhoid or tuberculosis; to give satisfactory treatment and prevent handicap, as in heart disease or infantile paralysis, and to save life, as in diphtheria and cancer.—Smith, R. M.: *Hosp. Social Service* **10**:23 (July) 1924.

THE VALUE OF VOLUME INDEX IN THE DIAGNOSIS OF PERNICIOUS ANEMIA *

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A color index greater than 1, when correctly determined, is usually regarded as the most constant and characteristic blood finding in pernicious anemia. The great variation in hemoglobin readings in different laboratories, however, makes the color index a very uncertain diagnostic measure. The plus index is dependent on a macrocytosis of the red cells. It is apparent that an accurate measure of the macrocytosis is a more basic procedure than the determinaion of the color index. The increase in size of the erythrocytes is usually determined by noting the diameter of the cells in a stained blood film. Such a measurement does not take into account the thickness of the cells, and thus does not indicate the true volume of the cells.

The volume of the average cells is best indicated by the volume index. This term was introduced by Capps,[1] in 1904, to denote the volume of the red cell relative to normal. He measured the mass of corpuscles by centrifugating a small amount of blood in a capillary tube, the hematocrit of Hedin. A count of the red cells was made simultaneously. The percentage by volume of cells divided by the number percentage of cells is the volume index. It is analogous to the color index, showing the relation of the mass of cells to the number instead of the hemoglobin to the number.

Capps compared the volume index with the color index in various diseases, and pointed out the essential facts to be gained from the procedure. He noted that in pernicious anemia the volume of the average red cell is greater than normal, while in secondary anemia it is less than normal.

The volume index determination is casually mentioned in textbooks of clinical pathology, but is little used in actual practice. I have recently studied the subject again, using much more exact methods than are now available. I have determined the mass of the red cells by the technic suggested by Hooper, Smith, Belt and Whipple.[2] Ten cubic centimeters of blood is withdrawn by venipuncture, and run into a centrifuge tube containing 2 c.c. of 1.6 per cent. sodium oxalate, an isotonic anticoagulant. The tube is centrifugated for one-half hour. The true cell mass is thus obtained without changes due to shrinking or swelling of the cells.

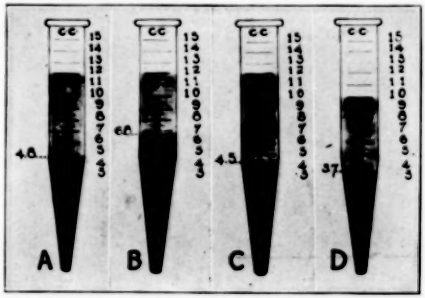

Fig. 1.—Volume of packed red corpuscles obtained on centrifugating 10 c.c. of blood containing 5,000,000 red cells per cubic millimeter: *A*, normal blood: volume of packed cells, 4.8 c.c. (100 per cent. of normal); volume index, 1.00. *B*, pernicious anemia: volume of packed cells, 6.8 c.c. (141 per cent. of normal); volume index, 1.41. *C*, chronic secondary anemia not due to hemorrhage: volume of packed cells, 4.5 c.c. (94 per cent. of normal); volume index, 0.94. *D*, chronic hemorrhagic anemia: volume of packed cells, 3.7 c.c. (77 per cent. of normal); volume index, 0.77.

The red cell counts have all been done on oxalated blood withdrawn by venipuncture. Usually, duplicate counts have been made, using only pipets and counting chambers certified as correct by the U. S. Bureau of Standards. The hemoglobin has been determined on the same oxalated blood, using the ferricyanid method of Haldane as adapted by Van Slyke [3] to his blood gas apparatus, and is calculated directly in grams. In determining the percentage of hemoglobin, 15.6 gm. per hundred cubic centimeters of blood has been taken as 100 per cent., since I have found this figure to be the average hemoglobin content of normal blood with a count of 5,000,000 per cubic millimeter, which is reckoned as 100 per cent. of cells.[4]

The data thus obtained afford an exceedingly accurate basis for the calculation of the volume index and the color index. Since the color index indicates only the amount of hemoglobin per cell and not the concentration, I have suggested a third index, which indicates directly the hemoglobin content per unit volume compared with normal.[5] This index I have called the "saturation index." Herz [6] attempted to express the same thing under the head "specific hemoglobin content" of the cell, while Rossdale [7] has suggested the term "volume-color index." The saturation index is calculated by dividing the percentage of hemoglobin by the percentage by volume of cells. From these data we can figure also the actual volume and hemoglobin content of the average cell, as well as the hemoglobin content of the cell mass.

The details of the calculation of the three indexes as determined here can be best illustrated by an example. On centrifugating 10 c.c. of an unknown blood with 2 c.c. of oxalate solution, 2.4 c.c. of packed corpuscles is obtained. Ten cubic centimeters of normal blood containing 5 million corpuscles per cubic millimeter, when similarly centrifugated, yields 4.8 c.c. of packed cells (International No. 2 centrifuge). The percentage by volume of cells in terms of normal is 2.4/4.8, or 50. The count of the red blood cells of the unknown blood is 3,000,000, or 60 per cent. of normal. Normal blood contains 15.6 gm. of hemoglobin per hundred cubic centimeters. The unknown blood is found to contain 6.24 gm., which is 6.24/15.6, or 40 per cent. of normal.

$$\text{The volume index:} \quad \frac{\text{volume percentage of cells}}{\text{number percentage of cells}} = \frac{50}{60} = 0.83$$

$$\text{The color index:} \quad \frac{\text{hemoglobin percentage}}{\text{number percentage of cells}} = \frac{40}{60} = 0.67$$

$$\text{The saturation index:} \quad \frac{\text{hemoglobin percentage}}{\text{volume percentage of cells}} = \frac{40}{50} = 0.80$$

* From the University of Kansas School of Medicine.
* Read before the Section on Practice of Medicine at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

1. Capps, J. A.: J. M. Res. **5**: 367, 1903.
2. Hooper, C. W.; Smith, H. P.; Belt, A. E., and Whipple, G. H.: Am. J. Physiol. **51**: 205 (March) 1920.
3. Van Slyke, D.D.: J. Biol. Chem. **23**: 31, 1911; **48**: 49, 1921.
4. Haden, R. L.: Normal Hemoglobin Standard, J. A. M. A. **79**: 1496 (Oct. 28) 1922.
5. Haden, R. L.: Accurate Criteria for Differentiating Anemias, Arch. Int. Med. **31**: 766 (May) 1923.
6. Herz, Max: Virchows Arch. f. path. Anat. **133**: 339, 1893.
7. Rossdale, George: Quart. J. Med. **16**: 245 (April) 1923.

In this blood, the volume of the average cell is 83 per cent. of the normal, the average cell contains 67 per cent. of the normal amount of hemoglobin, and the protoplasm of the cells is 80 per cent., saturated with hemoglobin. Figure 1 *B* shows the appearance of a tube after centrifugating 10 c.c. of normal blood containing 5,000,000 red cells per cubic millimeter.

Fifty-two normal adults, from 18 to 65 years of age, have been studied by the methods outlined. The

TABLE 1.—*Typical Volume, Color and Saturation Indexes, in Normal Individuals*

Red Blood Cells in Million per C.Mm.	Percentage by Volume of Red Blood Cells	Hemoglobin in per Cent.	Volume Index	Color Index	Saturation Index
4.99	100	101	1.00	1.01	1.01
4.98	102	104	1.02	1.04	1.02
5.15	104	106	1.01	1.02	1.01
5.28	104	103	0.99	0.98	0.99
4.80	99	97	1.03	1.01	0.95
4.70	83	84	0.99	1.00	1.01
4.56	90	90	0.99	0.99	1.00
5.20	98	103	0.95	0.99	1.05
4.87	99	97	1.02	0.99	0.97
4.97	98	99	0.99	1.00	1.01

volume, color and saturation indexes here are always 1.00, within the limits of technical error. This constancy of volume and hemoglobin content of normal cells is very striking. Ten typical determinations are shown in Table 1. I have found that the volume and

TABLE 2.—*The Volume, Color and Saturation Indexes in Normal Infants*

Age, Days	Red Blood Cells in Million per C.Mm.	Percentage by Volume of Red Blood Cells	Hemoglobin in per Cent.	Volume Index	Color Index	Saturation Index
1	4.14	121	119	1.46	1.44	0.99
3	3.52	115	114	1.64	1.63	1.00
5	4.21	133	129	1.58	1.52	0.97
5	3.88	106	104	1.38	1.35	0.98
8	4.50	119	120	1.32	1.33	1.01

color index of the blood from the longitudinal sinus of normal infants under 10 days is uniformly greater than 1.00 (Table 2).

Fifty-four cases of secondary anemia have been studied. These cases include types due to hemorrhage,

TABLE 3.—*Typical Volume, Color and Saturation Indexes in Secondary Anemia*

Red Blood Cells in Million per C.Mm.	Percentage by Volume of Red Blood Cells	Hemoglobin in per Cent.	Volume Index	Color Index	Saturation Index	Diagnosis
1.97	39	35	1.00	0.90	0.90	Carcinoma stomach
2.61	42	42	1.02	1.02	1.00	Chronic nephritis
2.50	47	47	0.94	0.94	1.00	Banti's disease with gastric hemorrhage
2.95	56	49	0.97	0.83	0.86	Subphrenic abscess
3.10	50	43	0.80	0.70	0.88	Diffuse carcinomatosis
3.52	71	71	1.00	1.00	1.00	Pyelonephritis
4.65	62	42	0.68	0.45	0.67	Syphilis
2.26	46	46	1.02	1.02	1.00	Acute gastric hemorrhage
3.00	47	37	0.78	0.62	0.79	Hemorrhoids
1.27	20	15	0.73	0.59	0.61	Chronic intestinal hemorrhage

increased hemolysis, decreased bone marrow function, or a combination of these factors. The three indexes are always 1.00 or less. Ten typical cases are shown in Table 3. In chronic hemorrhagic cases, the volume index is usually very low. No instance of a plus volume index has been found in this group.

The results of the volume index determination in fifty consecutive cases of pernicious anemia are shown in Table 4. In every case, the volume index is greater than 1, and usually very much greater. The volume index is always as great as the color index, within the limits of technical error, and usually greater. The

TABLE 4.—*Volume, Color and Saturation Indexes in Fifty Successive Cases of Pernicious Anemia*

Red Blood Cells in Million per C.Mm.	Percentage by Volume of Red Blood Cells	Hemoglobin in per Cent.	Volume Index	Color Index	Saturation Index
0.39	30	9	1.34	1.14	0.85
0.59	17	17	1.42	1.42	1.00
0.60	15	15	1.25	1.25	1.00
0.74	21	18	1.41	1.21	0.86
0.84	27	26	1.61	1.55	0.97
0.86	25	23	1.46	1.34	0.92
0.87	21	21	1.21	1.21	1.00
0.98	28	28	1.43	1.43	1.00
0.99	28	28	1.39	1.40	1.01
0.99	28	25	1.40	1.26	0.90
1.00	29	25	1.46	1.23	0.84
1.04	32	28	1.52	1.33	0.88
1.18	31	26	1.35	1.11	0.84
1.24	33	19	1.38	0.80	0.60
1.33	35	34	1.32	1.28	0.97
1.39	33	30	1.21	1.09	0.90
1.35	46	46	1.70	1.70	1.00
1.39	37	37	1.32	1.32	1.00
1.39	42	37	1.50	1.32	0.85
1.39	44	39	1.56	1.39	0.88
1.42	42	41	1.51	1.57	1.02
1.48	46	46	1.53	1.53	1.00
1.52	49	49	1.61	1.61	1.00
1.58	46	44	1.45	1.39	0.96
1.61	39	37	1.22	1.16	0.93
1.62	42	43	1.31	1.34	1.02
1.64	46	46	1.39	1.39	1.00
1.65	42	36	1.27	1.09	0.86
1.73	39	38	1.28	1.30	0.79
1.75	46	38	1.38	1.10	0.79
1.80	48	39	1.33	1.08	0.82
1.87	56	51	1.59	1.36	0.91
1.87	51	51	1.36	1.36	1.00
1.88	63	50	1.68	1.57	0.93
1.99	56	52	1.40	1.30	0.93
2.10	58	55	1.35	1.30	0.96
2.18	57	57	1.31	1.31	1.00
2.23	75	72	1.60	1.62	0.90
2.27	81	42	1.77	0.92	0.53
2.33	62	58	1.33	1.24	0.94
2.36	68	64	1.45	1.36	0.94
2.41	74	74	1.57	1.54	0.98
2.60	61	49	1.17	0.94	0.80
2.60	75	65	1.44	1.25	0.90
2.79	89	65	1.65	1.16	0.94
2.85	85	77	1.49	1.33	0.91
2.90	79	82	1.35	1.39	1.03
3.16	92	82	1.46	1.30	0.90
3.32	91	80	1.39	1.20	1.00
3.44	75	71	1.09	1.03	0.95
Av. 1.71	47	44	1.41	1.29	0.92

saturation index is never over 1, showing that the cells are never supersaturated with hemoglobin.

The three indexes in pernicious anemia are contrasted with the qualitative changes, as seen in a stained film in ten cases of the disease in Table 5. It is apparent

TABLE 5.—*Typical Color, Volume and Saturation Indexes Compared with the Qualitative Changes in the Red Cells in Pernicious Anemia*

Red Blood Cells in Million per C.Mm.	Percentage by Volume of Red Blood Cells	Hemoglobin in per Cent.	Volume Index	Color Index	Saturation Index	Anisocytosis	Poikilocytosis	Nucleated Red Blood Cells per 500 White Blood Cells
0.59	17	17	1.42	1.42	1.00	++++	++++	+++
0.60	15	15	1.25	1.25	1.00	++++	++	0
0.86	25	23	1.46	1.34	0.92	+	+++	10
1.35	46	46	1.70	1.70	1.00	+	+	0
1.39	37	37	1.32	1.32	1.00	++++	++++	0
1.87	63	59	1.68	1.57	0.93	+	+	0
2.18	57	57	1.31	1.31	1.00	0	0	6
2.60	75	65	1.44	1.25	0.90	+	0	0
2.88	85	77	1.46	1.33	0.91	0	0	0
3.16	92	82	1.46	1.30	0.90	+	+	0

that the excessive qualitative changes that are so often thought necessary for a diagnosis of pernicious anemia occur typically only in patients with very low red cell counts. The patients with relatively high counts, how-

ever, still have a high volume index, indicating the diagnostic value of the procedure in early cases of pernicious anemia. Such blood closely resembles the blood of infants under 10 days of age.

TABLE 6.—*Successive Volume Index Determinations of Cases of Pernicious Anemia*

Case	Date	Red Blood Cells in Million per C.Mm.	Percentage by Volume of Red Blood Cells	Hemoglobin in per Cent.	Volume Index	Color Index	Saturation Index
1	April 16	1.18	31	26	1.34	1.11	0.84
	April 30	0.97	27	27	1.38	1.38	1.00
	June 7	2.67	65	59	1.23	1.11	0.91
	Nov. 29	4.61	95	91	0.99	1.03	1.03
2	Nov. 20	2.18	57	57	1.31	1.31	1.00
	Dec. 8	2.89	73	75	1.22	1.25	1.02
	April 17	1.65	44	42	1.33	1.28	0.95
	July 14	2.42	65	62	1.35	1.30	0.95
3	Nov. 18	2.41	76	74	1.57	1.54	0.98
	Jan. 1	3.24	89	83	1.35	1.28	0.93
4	Oct. 12	0.59	17	17	1.42	1.42	1.00
	Nov. 20	3.21	73	70	1.14	1.09	0.96

A number of patients with pernicious anemia have been followed over a prolonged period, with successive determinations. The results in four cases are shown in Table 6. The patients who are doing well show a return of the volume index to normal. This is best seen in the first case in Table 5. The patients who have done poorly continue to have a plus index.

TABLE 7.—*The Average Volume, Color and Saturation Indexes of Secondary and Pernicious Anemia Contrasted with Normal Blood*

Red Blood Cells in Million per C.Mm.	Percentage by Volume of Red Blood Cells	Hemoglobin in per Cent.	Volume Index	Color Index	Saturation Index	
4.74	95	95	1.00	1.00	1.00	Average 52 normal men and women
1.71	47	44	1.41	1.29	0.92	Average 50 cases pernicious anemia
3.40	63	55	0.94	0.81	0.86	Average 47 cases secondary anemia not due to hemorrhage
3.57	55	44	0.77	0.62	0.80	Average 7 cases hemorrhagic anemia

The actual volume of the average cell, the hemoglobin content, and the percentage of hemoglobin in the cells in various types of anemia are shown in Table 7. The average volume index in pernicious anemia is 1.41, as contrasted with 0.94 for the secondary anemias other than those due to hemorrhage. The volume of the cells in pernicious anemia is thus 50 per cent. greater than in

TABLE 8.—*Comparison of the Volume, Hemoglobin Content and Hemoglobin Percentage of the Average Red Cell in Normal Blood and in Anemia*

Volume of the Average Cell in C.c. × 10^{-11}	Grams of Hemoglobin in the Average Cell × 10^{-11}	Actual Percentage of Hemoglobin in the Cell	
9.6	3.12	32.5	Average 52 normal men and women
13.5	4.02	30.0	Average 50 cases pernicious anemia
9.0	2.50	27.8	Average 47 cases secondary anemia not due to hemorrhage
7.4	1.94	26.2	Average 7 cases chronic hemorrhagic anemia

secondary anemia. It is noteworthy that the actual percentage of the hemoglobin in the cells in pernicious anemia is less than normal, and little higher than in other types of anemia. The difference is in the volume of the cell. This affords definite proof that a supersaturation of cells with hemoglobin does not occur. Figure 2 shows models made to scale from the averages shown in Table 7.

A volume index greater than 1.00 has been found in only four patients other than in pernicious anemia. These are given in Table 9. In all four, clinical symptoms showed that the condition was not pernicious

TABLE 9.—*Findings in Cases Other Than Pernicious Anemia in Which the Volume Index Was Greater Than One*

Red Blood Cells in Million per C.Mm.	Percentage by Volume of Red Blood Cells	Hemoglobin in per Cent.	Volume Index	Color Index	Saturation Index	Diagnosis
1.68	40	40	1.20	1.20	1.00	Aplastic anemia
3.30	79	66	1.20	1.24	0.97	Hemolytic jaundice
1.58	42	34	1.34	1.10	0.82	Splenic anemia
2.50	60	54	1.20	1.08	0.90	Von Jaksch's anemia

anemia. The presence of free hydrochloric acid in the gastric juice was demonstrated in three of the four patients. The absence of free hydrochloric acid is practically a constant finding in pernicious anemia. In

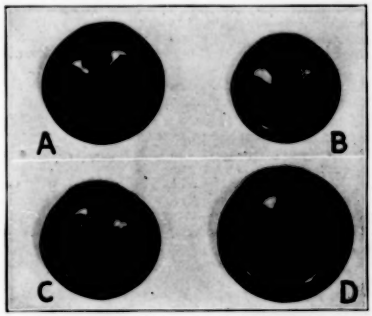

Fig. 2.—Models of red blood cells made from averages in Table 7 to indicate the relative volume in different conditions: *A*, normal adults: volume index, 1.00 (average of fifty-two cases). *B*, chronic hemorrhagic anemia: volume index, 0.77 (average of eight cases). *C*, chronic secondary anemia not due to hemorrhage: volume index, 0.94 (average of forty-seven cases). *D*, pernicious anemia: volume index, 1.41 (average of fifty cases).

forty-seven of the fifty cases here reported, a gastric analysis was made, and in no instance was free hydrochloric acid found. The absence of free hydrochloric acid is probably an essential diagnostic point. The combination of absence of free hydrochloric acid and a plus volume index is characteristic and constant in pernicious anemia, and probably essential for the diagnosis of the disease.

SUMMARY

A summary of the study of 171 individuals with an accurate volume, color and saturation index shows that:

In normal adults, the indexes are always 1.00, within the limits of technical error.

In secondary anemia, the indexes are usually less than 1.00, and seldom greater than 1.00.

A plus volume index is a constant finding in pernicious anemia. It is present even in early cases in which other qualitative changes are not apparent. The color index is never greater, and usually is less than the volume index. The saturation index is never greater than 1.

A plus volume index together with the absence of free hydrochloric acid in the gastric juice is practically pathognomonic evidence of pernicious anemia.

ABSTRACT OF DISCUSSION

DR. H. Z. GIFFIN, Rochester, Minn.: This contribution on the value of the volume index has a most important bearing on the early diagnosis of pernicious anemia. One of my associates, Dr. C. F. Dixon, has run a series of 100 cases, half of which were pernicious anemia, and his findings have corroborated those of Dr. Haden. A high volume index and the absence of hydrochloric acid in the gastric contents, even with only a slight degree of anemia, can be regarded as presumptive evidence of the presence of pernicious anemia. I do not know, however, that we can as yet say that the normal index is arbitrarily, 1, as, in a few cases of rather severe anemia secondary to other conditions, an index somewhat above 1 has been obtained. We can, however, feel certain concerning indexes of 1.1. In our series of cases of pernicious anemia, the lowest index was 1.13, and the highest 1.91. Estimation of the volume index is especially valuable in cases in which the color index runs between 0.7 and 0.9. In one instance of pernicious anemia with a constant color index of 0.8, using a Dare hemoglobinometer, a volume index of 1.9 was obtained. It is possible also that, in the very early cases of pernicious anemia, one may encounter a gradually rising index, and this rising index may be regarded as a significant feature. The volume index in our cases of polycythemia has been normal. In leukemia it has, of course, been high because of the admixture of leukocytes and erythrocytes. The estimation of the volume index should, I believe, be a part of the regular laboratory routine in questionable cases of anemia.

DR. JOSEPH A. CAPPS, Chicago: There are several points in Dr. Haden's paper that are of great practical importance. In our textbooks, the criteria usually cited on which the diagnosis of pernicious anemia is based are (*a*) high color index, (*b*) poikilocytosis and (*c*) nucleated red cells, particularly megaloblasts. Of greater value than any of these is macrocytosis. Macrocytes 9 microns or more in diameter can often be demonstrated by the micrometer scale, but, in many cases, especially in aplastic pernicious anemia, there may be no large macrocytes, but the volume index demonstrates that the average cell volume is above normal. Dr. Haden's methods of determining the volume, as well as the hemoglobin, are more accurate than those employed by us in our studies made in 1903. But his conclusions are the same as ours; namely, that in pernicious anemia there is a constant high volume index and that red corpuscles are never supersaturated with hemoglobin. In other words, a high color index is due to an increase in cell volume. The volume index procedure is simple and should be more extensively used.

DR. R. L. HADEN, Kansas City, Mo.: I should like to emphasize the simplicity of the technic of the volume index determination. The ease with which the test may be made makes it all the more valuable. Dr. Giffin said that there may be a high volume index and low color index. We have seen several such cases. Here the color index is of no differential value. The importance of the accurate estimation of the red cells should also be emphasized. We have no difficulty in getting accurate figures on the cell mass, but we do see many inaccurate red cell counts. We do not find much value in the saturation index, except as indicating the absence of any supersaturation of the cells with hemoglobin. I should like to thank Dr. Giffin and Dr. Capps for their discussion, and to say that our work has only confirmed the original observations made by Dr. Capps twenty years ago.

Birds as Disease Carriers.—To what extent diseases are carried and transmitted by the partially immune wild animals, such as birds on the wing to poultry yards, is a still unknown quantity. It may prove to be insignificant here and formidable there. It is a factor not to be neglected in our search for causes and antecedents.—Theobald Smith: *Edinburgh M. J.* **31**:225 (April) 1924.

FURTHER RESULTS WITH OVARIAN IMPLANTATION *

W. L. ESTES, JR., M.D.
BETHLEHEM, PA.

In pelvic inflammatory disease the belief is common that operative intervention is the court of last resort, and that the removal of all diseased tissues is demanded to insure restoration of the health of the patient. In many acute or subacute lesions, the involvement of the pelvic viscera is so complete that nothing short of bilateral oophorosalpingectomy, with or without hysterectomy, is advisable. In chronic or less extensive lesions, more latitude in judgment and greater possibility for conservative measures are offered. Nevertheless, it is customary to feel that the preservation of menstruation by the retention of the uterus and an ovary is the best the patient can expect and sterility the invariable price the sufferer must pay. Because the disease itself destroys the fallopian tube, the path of the

Fig. 1.—Anastomosis of uterine and ovarian arteries, the blood supply of the ovary.

ovum from the ovary to the uterus, opportunity for pregnancy seems past, and the surgeon's sole duty is to restore the patient to health, preserving menstruation if possible.

However, with a broad vision of the problem involved, not only should curative measures by eradication of the disease be contemplated, but also the restoration of the oviduct, or an adequate substitute for it, should be accomplished; just as intestinal resection must include not only excision of the diseased portion but also restoration of the fecal path.

Each operation for chronic pelvic inflammatory disease, therefore, should represent a potential threefold task: (1) the removal of diseased tissues; (2) the preservation of menstruation, and (3) the restoration or preservation of the opportunity for pregnancy.

In a recent report,[1] the operative devices to retain the possibility of pregnancy after bilateral salpingectomy were reviewed.

1. Franklin Martin's [2] ingenious plastic operation on the uterine cornu was one of the earliest.

2. Pregnancy, with abortion, has followed:

(*a*) Transplanting a free piece of ovary to the interior of the stump of one oviduct.[3]

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

1. Estes, W. L., Jr.: Surg., Gynec. & Obst. **38**: 394 (March) 1924.
2. Martin, F. H.: Chicago M. Rec. **24**: 1, 1903.
3. Morris, R. J.: New York M. J. **62**: 436, 1895.

(*b*) Sectioning the fundus of the uterus and placing an ovary still attached to its pedicle in the cavity of the uterus, "dangling like a polyp." [4]

(*c*) Division of the horn of the uterus; splitting the remaining ovary, leaving each half attached to the pedicle; one half being implanted in the horn of the uterus which was closed about it.[5]

3. Full term pregnancy has followed:

(*a*) Grafting of ovaries from one woman into another from whom both ovaries had been removed, the tubes being normal.[6]

(*b*) Free ovarian graft in the stump of the tube at the cornu of the uterus.[7]

In 1908, Petit [8] removed from a woman of 32, suffering from a "suppurating bilateral salpingitis," the right tube and ovary and the left tube and a portion of the left ovary, saving the external quarter. The uterus was then punctured at the uterine horn, the fragment of ovary, still attached to its pedicle, was introduced into the uterine cavity, and the puncture was closed about the pedicle, a procedure very similar to Storer's. The patient menstruated four days instead of seven, and two years later became pregnant and was delivered at term of a normal child. In a second patient, a girl of 18, only one fifth of one ovary could be saved. It was placed similarly in the uterine cavity. The patient had menopausal symptoms, hot flashes for five months; then she began to menstruate and has menstruated regularly since.

Tuffier reports a similar case of his own in which hysterectomy was later required because of the pain from intestinal and uterine adhesions. Menstruation, however, was regular, though painful. He believes that the uterine cavity is too narrow and small to contain the entire ovary, but he considers the operation logical and superior to his old extrapelvic transplantation.

Robineau,[9] too, has found that menstruation, though more abundant, is preserved after "intra-uterine transplantation" of an ovary. In one of his cases there were two periods of amenorrhea of three months' duration; actual pregnancy was doubtful.

Fig. 2.—Excision of the tube and insertion of the tube in the uterus. The lumen of the stump of the uterine horn is shown in the illustration as a dot.

4. Dudley, A. P.: Post. Grad. **15**: 546, 1900.
5. Storer: Boston M. & S. J. **172**: 41, 1915.
6. Morris, R. J.: M. Rec. **69**: 697, 1906.
7. Bainbridge, W. S.: Am. J. Obst. & Gynec. **5**: 379 (April) 1923.
8. Petit, cited by Tuffier: Bull. et mém. Soc. de chir. de Paris **48**: 1031, 1908.
9. Robineau: Bull. et mém. Soc. de chir. de Paris **48**: 1082, 1908.

OVARIAN IMPLANTATION

A year ago, I gave a preliminary report of our experience with an operation evolved by my father, termed "ovarian implantation." The results were sufficiently striking to justify an attempt to investigate the entire group. This operation has been performed close to 100 times over a period of approximately eighteen years. The most recent cases cannot properly be included in these statistics. The present study is based, therefore, on the records of ninety-five cases only. Among these cases are included those of Dr. W. P. Walker.

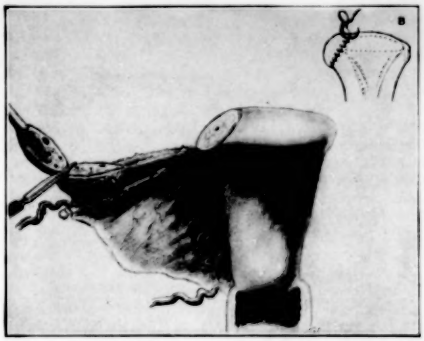

Fig. 3.—Resection of the ovary, leaving a raw area the size of the raw surface of the uterine horn; *B*, the raw area of the ovary sutured to the raw area of the uterus.

DETAILS OF OPERATION

With the patient in the Trendelenburg position and the upper abdomen packed off, pelvic adhesions and the tubes and ovaries are carefully and gently freed. The ovaries are thoroughly inspected, and the one more normal in appearance is chosen for implantation. The other may likewise be saved if its condition justifies it. In the majority of cases, it must be sacrificed. Operative procedures are given in the order of their occurrence.

1. The tube and ovary of the side opposite the implantation are first removed. The broad ligament and the uterine artery, where it emerges at the horn of the uterus, are tied off. The operation is not completed on this side until the implantation has been made (Fig. 4).

2. The tube of the implanted side is then removed, together with enough of the horn of the uterus at the tubal attachment to leave a raw area the size of the cut surface of the ovary. Care is taken to preserve the anastomosis of the uterine and ovarian arteries (Fig. 1). In the center of this surface will usually be seen the opening into the uterine cavity, less than 0.25 c.c. in diameter, or the size of the heads of two ordinary pins (Fig. 2). There will be a slight oozing but it can be readily controlled by pressure, after ligation of the uterine artery just below the operative area.

3. A longitudinal slice is then taken through the full diameter of the ovary, removing usually about one quarter of it from the surface opposite its ligament and mesentery (Fig. 3). The amount of ovary removed depends on the amount of cystic degeneration or inflammation that may be present. As high as seven eighths of the ovary has been removed, and the remainder implanted.

4. The cut surface of the ovary is then turned over on the denuded area of the uterine horn and sutured in place by a continuous catgut (chromic No. 0), beginning at the inferior margin and approximating the complete circumference of the ovarian and uterine wounds (Fig. 3, inset, and Fig. 6).

5. The round ligament is then plicated over this entire area by suture to the uterus in order to cover and completely peritonealize it (Figs. 7 and 8).

6. On the opposite side, the stump of the broad ligament is sutured to the horn of the uterus and, in turn, like the implanted area, covered by the round ligament (Figs. 5 and 7). A culdesac drain, if indicated, may then be inserted. The abdomen is closed without anterior drainage.

RESULTS

Among our early cases were two deaths from general peritonitis, apparently not attributable to the operation but to the disease itself. In our last sixty-five cases there were no deaths.

The cases are selected with regard not only to (1) age, (2) social status, and (3) conditions of the uterus, but also to (4) the stage of general pelvic inflammation. The following points are considered in the selection of cases:

1. The operation was performed on patients whose ages ranged from 16 to 41, the average age being 26.2 years. It was usually considered for young women below 30 because in the older women there is less desire for and less likelihood of pregnancy occurring.

2. Women of low mental caliber or of questionable character, obviously, should not be given the opportunity for future pregnancy.

3. A very edematous uterus, which is evidently involved in the inflammation, is considered a contraindication.

4. No plastic operation is attempted if there is present a large pyosalpinx or pelvic abscesses.

Ninety-three cases have been investigated, but completed returns have been obtained in only forty-five. The majority of the women who have undergone this operation have belonged to the nomadic labor class and have been exceedingly difficult to trace. The following data may be considered the results to date:

Operative Notations.—1. Cultures were in general sterile; gonococci were found in two cases, and colon bacilli in one case. There were six cases of tuberculous salpingitis. The vast majority of patients reported sterile were considered to be suffering from old chronic gonococcal infections.

Fig. 4.—Method of removal of nonimplanted side.

2. The right ovary was used a trifle more frequently than the left for the implantation; of eighty-five cases, the right was employed in forty-four, the left in thirty-seven, and both ovaries in four. However, each ovary may be used with equal facility.

After-History.—1. Pregnancy: Of the forty-five patients from whom reports were obtained, twenty-two had been pregnant before operation; twenty-three had never been. Pregnancy after operation occurred in four cases, 9 per cent. of forty-five. There were two cases of full term pregnancy; both children are living and normal in every way. In one case, the complete record is not available, but the patient had had no pregnancy before operation; in the other, the woman, aged 30 who had been married three years and had never been pregnant, was operated on for tuberculous salpingitis and implantation done, Aug. 12, 1916. The baby was born, July 19, 1921; delivery was normal, and both mother and child have been quite healthy since.

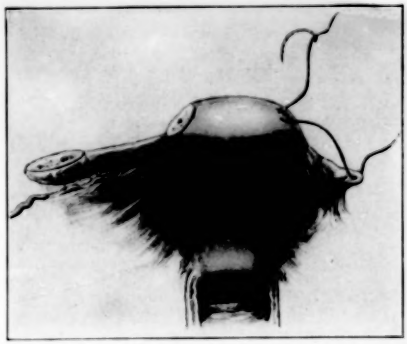

Fig. 5.—Method of suture of stump of broad ligament to uterine horn.

Two women had miscarriages at about three months. In neither case was any specimen available for corroborative examination. None of these four women had had more than one child or one pregnancy.

2. Menses: Menstruation was regular with the usual duration in thirty-three, or 73.5 per cent., of the patients; irregular in five, 11.1 per cent., and either profuse or scanty and painful; in three cases the report was insufficient for accurate deductions; only four patients, about 9 per cent., failed to menstruate at 23, 28, 31 and 37 years, respectively. In two of these, only a very small portion of the ovary was saved. There was almost always some gain in weight, usually from 15 to 75 pounds (7 to 34 kg.). Normal menopause, following the implantation, after menstruation for seven or more years, occurred in eight patients; in one, at the age of 33; in the others, at from 41 to 47 years.

3. Pain: Fifteen, or 33⅓ per cent., complained of some pain, usually with the menses, either headache, backache, or pain in the same side as the implanted ovary. One woman had, with menstruation, rather severe pain in the breasts, and backache.

4. Nervousness: Twenty-three, or about 50 per cent., of the patients, acknowledged that they often felt nervous. One believed she was less nervous following the operation. One woman, about a year after the operation, developed symptoms of hyperthyroidism.

5. Subsequent Operation: Four, or 9 per cent., had sufficient discomfort or subsequent pain and disability to require another operation. A cystic enlargement of the implanted ovary was found in three patients. There was no definite information as to the fourth, but a similar condition probably existed.

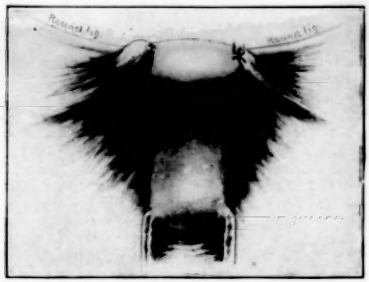

Fig. 6.—Ovary implanted (left); broad ligament applied to the uterine horn (right).

COMMENT

Following implantation, then, there is usually a fairly normal menstruation, a return to good health and a gain in weight, but there may be nervousness and some discomfort, such as backache, headache or pain with the menses, in or about the implanted ovary. Rarely, the ovary may become cystic and require subsequent removal. Pregnancy may occur.

If pregnancy takes place, it is because the opening in the uterine horn is brought in contact with a point

Fig. 7.—Suture of the round ligament over the implanted ovary: below, beginning of the process; above, concluding the same suture.

on the cut surface of the ovary where a graafian follicle will develop.

Factors that influence the successful extrusion of the ovum into the uterine horn and cavity are: (1) patency of the uterine horn, and (2) the proper development of a graafian follicle.

1. The inflammation of the tube, or the trauma of operation, may involve the horn or its mucous membrane so that in healing it is closed. This possibility must always be reckoned with as a cause for failure of pregnancy and may be obviated by a deeper section through the uterus reaching the beginning of the uterine cavity itself.

2. The ovum or ovum-bearing tissue, the cortex of the ovary, may not be brought in contact with the mucous membrane opening of the uterine horn. This may more surely be accomplished by care in sectioning the ovary so that a bare shell of capsule, or else the greater portion of the ovary down close to the hilum, is removed, so that the cut surface, which will be applied over the uterine horn, shall be through the ovum-bearing tissue. When most of the ovary is sacrificed, the other had best be saved to insure menstruation.

These changes from the original technic have been used during the last year. It is too early to determine how successful they may prove.

Fig. 8.—The operation completed, with both uterine horns covered by the round ligaments.

I have been unable to find any record of a series of cases as extensive as ours. Of other procedures that may yield pregnancy, the introduction into the uterine cavity, through the uterine wall, of a portion of an ovary still attached to its pedicle, seems to have yielded encouraging results in the few cases reported (Dudley, Storer, Petit, Tuffier), though hysterectomy may be necessary later to relieve painful and profuse menstruation. The uterine wall-piercing operation may prove of special value when inflammation involves the stump of the tube and the cornu; in tuberculous salpingitis, when the introduction of an ovary into the uterine wall might disseminate disease, an implantation would seem preferable.

CONCLUSION

It is desired in this second report again to direct attention to the possibilities of conservative ovarian implantation, and the opportunity that it affords for permitting pregnancy as well as for maintaining menstruation.

PREVENTION OF STERILITY*

DONALD MACOMBER, M.D.
BOSTON

The great interest recently shown by the profession in the problems of sterility has given a renewed impetus to the study of this subject and has called attention to the large economic and social aspects of the question. It has not been generally recognized, however, that sterility presents its problems not only to the specialist, but also, to an even greater degree, to the general practitioner of medicine. The rôle of the practitioner is not the same as that of the specialist. The latter is called in as an expert in diagnosis or treatment, to deal with conditions that have already arisen; the practitioner's rôle is rather one of prevention, as, in fact, it always has been. He is the middleman between patient and specialist, and it is his duty to disseminate knowledge of those particular laws of hygiene, the breaking of which is almost always responsible for the development of sterility.

The importance of the subject can hardly be overemphasized. Sterile marriages are very prevalent, and it would seem as if modern ways of living, and possibly also modern economic standards, with the consequent widespread use of methods of "birth control," were causing a still further increase in their number. It is rare, indeed, in the practice of medicine to deal with a condition affecting every tenth family throughout the community, and yet that is the figure which every study of the frequency of sterility has shown. Considerations of the so-called differential birth rate, with a falling off in the number of births among the highly educated, make the question of prevention of sterility one of compelling importance. Many economists have laid the decreasing birth rate among this class to voluntary limitation in the size of the family; that factor is of undoubted importance, but we believe that it has been supplemented by an actual decrease in fertility. Any help, then, which can be gained by studying the prevention of sterility will be of great economic and social importance to the race.

It has been the universal experience in every branch of medicine that it is not until the causes of a given disease are well understood that much can be done in the way of effective prophylaxis. Our knowledge of the causes of sterility is still far from being complete, but recent studies have so far clarified the field that at least the more general aspects of its etiology are well recognized. Before proceeding, then, to a discussion of the prevention of sterility in its various forms, we must have a clear understanding of the causes that are operative in producing any particular kind of sterility. These causes and their prevention may be discussed under four general classes, namely, developmental, congestive, infective and constitutional. In animals, there is sometimes to be found a fifth cause of sterility, when, in pure bred strains, a low degree of fertility is inherited; but this is an unimportant factor in the human race since we rarely, if ever, encounter a degree of inbreeding of sufficient intensity to make this particular factor operative.

It is not my intention, under any of these headings, to enter into a minute discussion as to all the possible causes, or all the methods of their prevention. It is rather my intention to point out certain broad principles that seem to me to be back of the individual manifestations.

DEVELOPMENTAL CAUSES OF STERILITY

Under the first heading, then, I shall not discuss such rare developmental anomalies as double uterus, absent vagina and absent testes, but refer only to the more common and less complete failures of development. These minor failures are much more commonly found in the woman than they are in the man. In fact, the only common failure of any importance at all that occurs in the man is undescended testes. The cause of this is little understood, and therefore we must wait for further knowledge before any rational method of prevention can be devised.

Minor failures of development in the female are of much more common occurrence, and for that reason the causes for such failures are more fully understood. As seen in later life, the chief abnormality seems to be a mechanical one. In childhood, the vagina is short and the cervix and uterus lie in the same axis with it, and relatively close to the symphysis. The development that normally goes on at the time of puberty consists in a growth of the uterus, cervix and vagina. This growth results, among other things, in a lengthening of the anterior wall of the vagina, which permits the developing cervix to take its normal position back in the pelvis, and the fundus to rise to the normal adult position. Occasionally, this development fails entirely, in which case a true infantile condition of the uterus and cervix results. Most frequently, the fundus undergoes at least a certain amount of development, and the chief failure is in the lengthening of the anterior wall of the vagina. As the fundus is drawn up and forward, and the small undeveloped cervix is held anteriorly by the short wall of the vagina, an anteflexion is bound to result. There are naturally all degrees between the infantile and the normal; some anteflexions are symptomless and others give rise to the most extreme forms of dysmenorrhea.

These facts in regard to anteflexion and underdevelopment in general are, of course, well known, but there is a general lack of appreciation of the possibility of preventing their appearance. It seems fairly obvious that the cause, whatever it may be, cannot be an hereditary one; if this were so, the amount of sterility which failure of development must necessarily produce would soon, under the action of natural laws, breed itself out. If the cause is not hereditary it must be environmental, and the natural presumption would be that it must be an environmental cause, acting during the developmental period of puberty. We believe, on this and also on other grounds, that this cause is to be found in poor hygiene during this period, and that, if recognition of this fact were sufficiently general, this form of sterility might largely be eliminated.

The question, then, of the proper hygiene during the development period assumes chief place in the discussion of the prevention of these failures. In dealing with this question, we must remember that the function of reproduction, perhaps more than the function of any other system in the body, requires the highest possible bodily perfection, and that therefore anything affecting general health and condition may, at this developmental period, be doubly important in giving rise to various anomalies. It is rare, indeed, in the adult to find underdevelopment present with the history of a normal girlhood. The common history in cases in which there

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

has been a failure of development is a slow maturing in visible growth and development, together often with the story of painful menstrual periods of increasing severity. Such a condition is insidious in its onset, since it is uncommon to get a history of pain with the very earliest menstruations. It is often only when social duties and pleasures, together with long school hours, are added to the normal strain of this trying period in a girl's life that dysmenorrhea and other functional disorders make their appearance.

Prevention can be made possible only when mothers understand the dangers of overtaxing nervous and physical powers during puberty, and particularly during menstruation itself. They should realize that during menstruation the whole physiologic condition of the woman, including the functions of the digestive, circulatory and nervous systems, is unstable and easily upset. This is especially true during the first day or two of active flow. It is something too often neglected by teachers and directors of physical training. In after life, this instability of the nervous system, with its tendency to functional derangements of other organs, is usually only temporary and of much less importance; but in the growing girl, a few repetitions of overstrain during these critical periods may institute permanent trouble, and perhaps definitely arrest development.

During puberty, and when the partially developed organs of the growing child are not as yet fully adapted to the performance of their function, menstruation is often irregular and imperfect, and the degree of care that is given to the first few periods often determines the satisfactory, or unsatisfactory, character of the catamenia during succeeding years. The mother of a girl who is approaching puberty should always warn her daughter of what is to be expected, should tell her that there is nothing abnormal in the appearance of catamenial blood, and should urge her to report the fact at once. She should be instructed that she can take no more important supervision of her daughter than to insist on complete rest during the first few menstrual periods. The child should remain in bed, or between the bed and the sofa, as may be most restful to her, during the whole of the first period, but should be warned that such extreme care will not be necessary during the rest of her life. If this first catamenial period passes over easily, she may be up and about the house during the last day or two of the next period, and the amount of care taken should decrease gradually during succeeding months, in accordance with the amount of nervous or other general disturbance or of local discomfort which the individual girl experiences.

In the normal course of events, and with some such care as has just been outlined, menstruation should keep on as a regular and practically painless normal function. Should, however, the periods gradually become more painful, with other symptoms pointing to a deranged function, a determined search should be made for anything in the environment that may be instrumental in bringing on these disturbances. In most instances, the disturbing factor will be found to be easily remediable, and an attempt should be made to relieve the load, even at the expense of temporarily leaving school or giving up extra social duties. The importance of conformity to the laws of hygiene during this difficult period in a girl's life cannot be exaggerated.

Such knowledge must be disseminated by the practitioner. He knows the patient in her home environment, and can usually make a pretty shrewd guess as to the real cause. If mothers really understood that fully one quarter of sterile women are sterile from this one cause alone, and that the issue lay directly with them, it does not seem that there could be any doubt as to the outcome. Where dysmenorrhea has become established, everything possible should be done to encourage bodily development. Plenty of the proper kind of exercise must be supplemented by plenty of fresh air and healthy sleep. It must also be accompanied by a proper diet. All the recent experimental work on diet has emphasized the importance of a properly balanced ration to growth and normal development. This work has brought out also that seemingly insignificant deficiencies have a disproportionately great effect when young growing animals are submitted to them. The diet of every young animal or growing boy or girl must contain an adequate percentage of protein from sufficiently varied sources, an abundant supply of the various vitamins, and last, but probably most important of all, a large amount and variety of the various mineral constituents of the body. The most important of these are calcium, phosphorus, iron and iodin. The diet of the young girl or boy should include one quart of milk, eggs, plenty of butter, green vegetables and fresh fruits, in addition to the usual amount of meat or fish and enough starchy foods, such as bread, potato and cereals, to supply the needed heat and energy. Sweets are to be avoided, as they not only crowd out more valuable foods, but also may be positively harmful in themselves. A whole wheat bread or whole grain cereal combines salts, vitamins and the energy producing starch to much greater advantage than a bread or cereal from which these important elements have been removed by milling.

These brief remarks as to the management of the growing child during a difficult period of development are made as suggestive of the manner in which it seems to me the problem should be attacked. There is, after all, nothing particularly new to be found in them. They have always been practiced by those parents and teachers who have been most successful, and furthermore they form the basis of the routine care which all breeders use in the rearing of young animals. It should be said, however, that while these measures will prove effective in preventing the development of most dysmenorrheas of this type, cases in which the dysmenorrhea has become thoroughly established will usually require operation before the function can be returned to normal.

CONGESTIVE CAUSES

With this brief description of the failures of development and of some of the ways in which they may be avoided, let us pass on to the second subject in our classification; namely, the congestive group. Before speaking of the prevention of the types of sterility that are caused by congestion, it is necessary to say a few words about congestion itself, and to explain the sense in which this rather ambiguous term is here used. Unless qualified in some way, congestion calls up in the minds of most of us associations with infection or inflammation. It has, however, a much broader implication in its meaning of increased blood supply. Used in this sense, it may mean increased arterial blood, in which case it is called active congestion, or it may mean an increase in the venous blood, when it is spoken of as passive congestion. The pelvic organs, in particular, are peculiarly liable to normal recurring active congestions. Those which precede the catamenia and those which accompany coitus and pregnancy may be mentioned, and these are normal and harmless. There are, on the other hand, causes—both functional and pathologic—which

tend to produce passive congestion, and this is very apt to become chronic. It goes almost without saying that such pathologic conditions as prolapse of the uterus or laceration of the cervix or large fibroids may cause sufficient congestion to interfere with conception. In the same category must be classed those cases of retroversion in which there is real interference with the circulation, sufficient to produce chronic congestion. The mechanism in these cases is set up by an interference with the venous return rather than with an overfrequency of the normal active congestion, and of these we need not speak here because no methods of prevention are yet known.

In addition, however, to the causes of congestion mentioned above, which may be classed as of pathologic origin, there is an even more important class of functional origin, which is preventable. The first of these is produced by irregularities in the marital habit. Overfrequency in either sex fails to allow the entire disappearance of the active congestion which normally accompanies coitus. A little congestion persists, and in time this produces changes in the character of the secretions, particularly those of cervix or prostate, which prove injurious to the vitality of the spermatozoa. It is a rather remarkable fact that both deprivation and overexcitation without relief have the same effect. In either case, the undue persistence of an active normal congestion must in time lead to the appearance of the harmful, chronic type. The continued presence of this chronic congestion eventually produces changes in the secretions of either sex, such as an abnormal amount of mucus or a great increase in the number of leukocytes.

The secretions commonly affected are, as has been said, the cervical in the female and the prostatic or vesicular in the male. More serious than any gross changes, which are evident on inspection, are those biochemical changes which render the secretions hostile to the spermatozoa. Any abnormality of the marital relation may produce some of these changes by causing a chronic congestion; for instance, even habitual failure of complete orgasm may act as such a cause, owing to the absence of the proper physiologic relief from the normal preliminary engorgement of the blood vessels.

It seems fairly obvious, therefore, that, since many of these sterilities of congestive origin are primarily due to irregularities of function in married life, their prevention can be brought about only by a fuller understanding of the normal physiology of marriage. The time for such knowledge to be most effectively given is before marriage. It always comes best from the family physician, and it behooves the medical profession to see that adequate instruction in such matters is given to all medical students so that later, when the need arises, they may have the necessary knowledge to give worth while advice. Just what the character of the actual advice to be given patients before marriage shall be will naturally vary with the individual case and according to the physician's best judgment as to a given couple's needs. It should include full caution as to the dangers of overfrequency or undue restraint. It is often unnecessary and unwise to go into too great detail at this time; but, once the ice has been broken, the couple will feel that they have some one to whom they may subsequently go for advice, if this should prove necessary. At the time when any premarital instruction is being given, it is not uncommon for the question of physical examination to be raised. We believe that this is a most important matter, but one which, in the nature of the case, should not be unduly urged by the practitioner. It is rather for the patients to be educated to the benefits to be derived from such an examination, so that they will request it. If such an examination is desired, it should obviously include, in addition to the routine physical and blood examinations, a careful local examination of the pelvic organs in either sex. The details of such an examination need not, of course, be dwelt on further than to urge that a careful search be made for such abnormalities as tight hymen in the woman or the presence of trouble in prostate or seminal vesicles in the man.

In addition to the chronic congestions arising from abnormality in the marital relation there is the functional congestion which accompanies normal pregnancy and which occasionally, when extreme, for one reason or another, may act as a cause for repeated miscarriages, and in this indirect manner may therefore be considered as among the causes of sterility. Active congestion is, of course, normal during any pregnancy; but during the early months this is occasionally increased by some interference with the normal venous return. These patients are apt to complain of extreme backache, and there is a tendency to have a little flowing now and then. They are very susceptible to fatigue. These symptoms usually persist into the fifth month, but soon disappear as the uterus rises out of the pelvis. If they are neglected, miscarriages are very apt to occur, and they are mentioned in this connection only because, if precautions to keep the congestion at a minimum are taken, the danger of miscarriage is much diminished.

INFECTIVE CAUSES

We have now completed our discussion of the first two classes of sterility, namely, the developmental and the congestive, and the means by which they may often be prevented, and we come to the third class, which is caused by some form of infection. In thus separating the various causes of sterility into artificial groupings, one runs a certain amount of danger, because it is rare in practice to be able to classify a given case under a single heading. It might, for instance, seem that the infections that are now to be taken up are to be considered as entirely separate from the congestions, whereas the exact opposite is the case. The type of infection in which we are most interested in a discussion of prevention almost invariably follows a preliminary congestion, and therefore, from the point of view of prevention, the particular type of infection is only of secondary importance. I am well aware that the infection which is most often seen as a cause of sterility is that produced by the gonococcus; but since the prevention of this type of infection is so obvious, and is already a matter of public concern, I shall pass on at once to a discussion of those milder forms which are less commonly recognized. These infections are presumably caused by some of the less virulent strains of the common pyogenic organisms, since they rarely, if ever, cause any symptoms. Even the mildest of them, however, is extremely important from the point of view of sterility, because of the biochemical effect they may have on the vitality of the spermatozoa, and hence on the fertility of the person concerned. Since, as has been said, they rarely, if ever, produce symptoms, or have a recognizable acute stage, it is impossible to give a precise description of the conditions that are primarily at fault; but there seems to be no question that congestion is the chief predisposing factor and that the type of the ultimate infection is, as a rule, entirely accidental.

The common location for these milder infections in the male is in the prostate or the seminal vesicles, or both. The presence of the infection is indicated by finding pus in the semen or expressed prostatic secretion, and by its biochemical effects on the vitality of the spermatozoa. Similarly, in the female, the common location is in the glands of the cervix, and is shown by heavy leukocytosis, sometimes amounting to actual pus, in the secretion from that organ. As with the male, such infected secretions are hostile to the spermatozoa. Not infrequently, such infections are found to have involved the tubes, but this is much less frequently the case than with gonorrhea, and it is less common to obtain a history of acute symptoms.

As has been said, and as is of course well recognized, gonorrhea is an important cause of sterility. It is less commonly recognized, however, that secondary infection of the prostate or vesicles may persist long after the gonococci have ceased to be present. Such cases of prostatitis, while incapable of transmitting gonorrhea, may be serious matters in their effect on fertility, both because they reduce the vitality of the spermatozoa, and because they may act as sources of infection to the woman.

These mild, nonspecific infections of the female genital tract may be only evidenced symptomatically by the presence of a slight leukorrhea. Many leukorrheas are undoubtedly of very little importance to health; but the presence of a leukorrhea should never be accepted as normal or of little moment to fertility. Sometimes a leukorrhea is the result of congestion only, and merely serves to call attention to the abnormality of function that is causing the congestion; but more often it points to one of those mild cervical infections of such low grade as not to affect health, but severe enough to alter secretions and produce sterility.

The prevention of sterility from infection resolves itself into the prevention of the several factors which make up the general subject and which we have just discussed. In the first place, the prevention of gonorrhea must always remain of the utmost importance. When gonorrheal infection has taken place, marriage should not be permitted until a complete cure has been effected. From what has been said on the secondary infections that are so apt to be present in the prostate, it will be seen that a premarital examination which searches only for active gonococci will be entirely inadequate for the prevention of sterility. Such an examination must rule out all possibility of secondary infection as well, and should always be checked up, when there is any question, by an examination of the semen itself; for it is often only by examining the semen that the evidence of infection is discovered and an estimate of fertility can be made. The prevention of the nongonorrheal infections of the genital tract in either sex depends mainly on the prevention of congestion and has been spoken of under that head.

CONSTITUTIONAL CAUSES

Finally, there is a fourth and last group of sterilities, which are of constitutional origin. This group is perhaps less well understood than any of the preceding ones, but for that reason it is not to be dimissed as of less importance. It must be remembered that the reproductive function is, after all, a function that is more truly dependent on the general state of health of a given individual than is any other. Anything that seriously affects the life or health of the individual may in fact indirectly affect the function of reproduction.

Attention to diet, general hygiene, exercise, etc., and the elimination of all possible foci of toxic absorption are just as important in the prevention of sterility as they are in promoting general health and longevity. There is one factor that must be included under this general constitutional heading, which is so important that I wish to say a few more words about it. I refer to the psychologic, or nervous, factor, which has become so important in our modern life. Nerve strain has become a very definite cause of sterility or, rather, of low fertility. This is particularly common among business men who have attained to a certain degree of responsibility in their chosen line. They begin to worry, take their business home, and live, eat and sleep with it. At the same time, they cut down on exercise and allow their bodies to get entirely out of training. In many instances, a marked lowering of fertility occurs. The prevention is obvious, but it requires physicians with the courage to go out and tell these patients how much damage they will do themselves if they keep on with their bad habits of living. Worry and nervousness in the woman are equally important in the derangement of function. It is not at all infrequent to find pelvic congestion of a most extreme type, with no other cause than worry and the unsatisfied desire for children. There is also a good deal of clinical evidence that nonfunction of the ovaries may be produced from the same cause. The end-result of this failure of ovulation is seen in the so-called "retention cyst" ovaries, and it is an interesting clinical observation that such ovaries are seen only in the nervous, emotional type of woman. Nerve strain, then, may be an important cause of lowered fertility, and its prevention will be valuable in eliminating certain types of sterility.

CONCLUSION

There are several points that should be emphasized. The first is that we are dealing with a real problem and a big one. Sterility is too important biologically and economically to be neglected. The problem is there, but we have not been facing it. We have treated the effects and not the causes, and the causes will go on producing effects until we remove them. The real problem is not how to deal with sterility, but how to prevent it before it develops. In this paper, I have tried to point out a few of these effects and to explain the causes that have produced them. When we know the causes, it is as a rule fairly easy to avoid them. What we need is more knowledge, and this knowledge must be spread by the specialist to the family physician and by him to the laity. There is a growing demand among people of intelligence for more light on these matters, and it is the duty of the medical profession to supply that light and not leave this important field to quacks and charlatans.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. MAYO,* ESTES AND MACOMBER

DR. J. B. DELEE, Chicago: In our gynecologic work, we see not a few cases with symptoms of appendicitis in which the uterus is attached to the right side of the pelvis. We also see conditions that gynecologists call chronic parametritis, but it is difficult to prove these cases at necropsy or at operation. We have not found parametritis associated with acute appendicitis, but in the chronic cases we often obtained a history of one or two attacks. The inflammation may have proceeded from the appendix along the so-called Clado's ligament. That

* Dr. Mayo's paper was published last week on page 592.

the appendix can cause pelvic inflammation by contact is a well established fact. Regarding Dr. Macomber's paper: I believe that a great many of these cases are congenital if not hereditary. There is a great difference between congenital and hereditary conditions. A woman can have fifteen children, and four or five of them can be congenitally deficient in one organ or another. There is such a condition as familial sterility and dystocia. Several children of the same mother will have contracted pelves and small uteri. It is due to an inherent lack of the reproductive impulse. Regarding the cause of the lack of development of the uterus, I think the doctor did not go back far enough. He should go back to the baby before it is born. The general health of the mother during pregnancy has a good deal to do with the development of the child. Her living conditions and nourishment have a great deal to do with its growth and strength. He should go back to the young infant in arms, to the infections in the earlier days of life, the infections of the uterus causing inflammatory conditions, and other conditions producing malnutrition of children even when nursing at the breast. I am old enough to see the children that I delivered, grown up. Some who suffered from malnutrition in early life are now showing maldeveloped uteri and maldeveloped pelves. In giving the prognosis as far as pregnancy with chronic infections is concerned, a great deal more can be said than the paper contained. When the husband has an infected prostate, there is plenty of reason to explain why his wife is sterile. Besides making her sterile, he is keeping up her chronic cervicitis and salpingitis. We may cure the two as often as we will, but as soon as she goes back to her husband she gets a reinfection. One of the best cures for cervicitis is to send the husband to a genito-urinary specialist. Regarding Dr. Estes' paper, I have never used the operation he mentioned. I have split the cornu of the uterus and have sewed the tube to it so that there was an opening into the uterus, and then have sewed the ovary into that cornu. I regret to say that none of these women became pregnant. I have done another operation: I have anchored the ovary where the tube ought to be, and then tried to sound the tube, running a probe into the uterus. When I thought I had succeeded, I have pushed the probe through the uterine wall and brought it out on the anterior surface of the uterus, then attached four strands of forty-day chromic catgut to the probe and pulled it back through to the neighborhood of the ovary and left the ends at the outer opening. The puncture in the anterior wall was closed with a suture. The intention is to produce a utero-abdominal fistula. It is sometimes possible to do this with catgut. We do it sometimes when we do not want to, in sterilizing women after cesarean section; they sometimes become pregnant. In quite a number of cases in which I performed this operation, not one of the women became pregnant.

DR. RUDOLPH HOLMES, Chicago: Sterility is not a problem of the female alone. It is also a problem of the male. It is, therefore, a dual problem with every couple. Any study of sterility in the female is worthless unless one studies jointly the male. There are two broad classes, absolute and relative sterility. The absolute is that in which there is an impermeability of the tubes. In such cases, removal of the gross pathologic condition does not always cure the sterility. Without a more definite knowledge of what processes produce conception, we can say practically nothing about sterility or its antithesis—fecundity. Dr. Macomber has covered very adequately the pathologic condition in women. He has referred in only a very minor degree to men. A man who, after repeated examinations, has an absence of spermatozoa is probably definitely sterile. A man who has very active normal spermatozoa living for half an hour on a warm glass may be regarded as normal, but he may be unable to fertilize the ova of his mate. For instance, I have had two patients who became dissatisfied in their marital relations, and they merely swapped husbands. Both had been sterile with their original husbands; both immediately conceived with the second. This problem is so definitely associated with biochemical processes that I believe no operation is justifiable in women for these minor affairs or diseases that promote sterility until the man has had repeated examinations. I would not consider using a Rubin procedure until the man had been repeatedly examined as to the motility of the spermatozoa. I can say that nine times out of ten when a woman comes to me for sterility and I say to her, "I want to talk to your husband," the husband will not come. He thinks because he is virile that it is an impeachment on his manhood, and he will refuse to go to a genito-urinary specialist to see whether he is normal. He is perfectly willing to subject his wife to repeated examinations and to the risk of an operation, but he will not be examined himself.

DR. ROBERT T. MORRIS, New York: Dr. Mayo's observation that infection does not extend from the appendix to other organs is timely. Infection sometimes extends from other structures to the appendix. I have called that type extrinsic infective appendicitis in contradistinction to ordinary intrinsic infective appendicitis. When we have infection at distant points simultaneously, with involvement of the gallbladder and pylorus, we must go back to Rosenow's observation in relation to the elective affinity of the appendix, gallbladder and pylorus for toxins, the infection developing synchronously in two or three organs from some focus of infection, perhaps a distant one. My experience has not been wholly like Dr. Macomber's; I have better persuasive powers with men and get them to go for an examination in regard to their own part in sterility. If we are going to introduce this biochemistry feature, we are going to have more complications in divorce courts and on a physical basis. Dr. Estes' procedure is well done. The pragmatic feature of pregnancy is the important thing, after all. When I have split the uterus and put in ovarian grafts both in women and, experimentally, in animals, I have found that the graft usually disappeared even in homoplastic grafting. With the latter, we have avoided precipitate menopause, which is a definite advantage. We sometimes gain the same point from heteroplastic grafting, but it is not practical, on the whole. Dr. Estes' method of homoplastic grafting is the best I have heard of. In pyosalpinx I have not removed ovaries or tubes for some years. In the acute peritonitis stage, I have depended on Clark's opium treatment and then have opened abscesses, split the tubes wide open clear down into the uterus, and fastened them to the anterior abdominal wall, put in a drain and let them drip like a maple tree in March. Meanwhile, the patient has been put on vaccines and, locally in the vagina, hygroscopic astringents. Under this treatment, the great big ragged bleeding mass, in which one could hardly tell the ovary from the tube, will in the course of three months clear up, and one will find that the tube that was split open has become round. In cases in which no fimbriae were seen, new fimbriae are often present. Some months later, when the time comes for releasing the tubes that were fastened to the abdominal wall, if an ampulla does not show new fimbriae we split a clubbed end open again and cover it with thymol iodid. Nature is bound to restore the oviducts, if we give her a chance. It is surprising to find to what extent Nature gives back good function. These women are capable of having pregnancies, some of them extra-uterine, to be sure. I had one patient who had an extra-uterine pregnancy one year after this operation, and the next year she had a normal pregnancy from the other side. The extra-uterine complication was much better than having tubes and ovaries thrown into the waste basket because they looked bad at the time of the first operation.

DR. F. F. LAWRENCE, Columbus, Ohio: There are probably more cases of overlooked and neglected appendicitis of the mild or chronic type than any other condition within the abdomen. Dr. Mayo has called attention to them in his paper. I spoke yesterday in another section of bile tract infections, which, in a large number of cases, are the result of a moderate or chronic form of appendicitis. As Dr. Mayo mentioned, contrary to the older theory of appendicitis being due to the colon bacillus, the great majority, if not all, the cases are due to the streptococci or mixed infection developing not within the mucosa but within the wall of the appendix. If one recalls the anatomy of the portal circulation and its lymphatic accompaniment, it will be remembered that the mesenteric veins with the accompanying lymphatics carry the infection from the lower intestinal tract into the liver and into the upper quadrant

of the abdomen. Dr. Mayo stated that the lower abdomen was practically never infected as a result of appendicitis, except by contiguity of tissues. About 5 per cent. of all cases in women have a continuous meso-appendix and meso-ovarium, not only the circulation but also the lymphatics being continuous. In that 5 per cent., one may have a direct infection of the pelvic structures on the right side, tube, ovary and broad ligament, coming from the acutely inflamed appendix. One should keep in mind the sympathetic nervous system, with the pneumogastric coming down along the colon with its sympathetic connections and the branch from the solar plexus which supplies the stomach, duodenum and hepatic region. It should be remembered that, in cases of constant irritation, hypersecretion is produced and, consequently, in these chronic cases of appendicitis there is not only a hyperacidity but a hypersecretion. The cases have not stopped the secretions, they only increase them and favor the development of gastric and duodenal ulcer, frequently with fatal termination by hemorrhage, particularly when the ulcer extends from the pylorus down into the duodenum. One of the most important things is to keep in mind another thing, that every infection, whether in the appendix or somewhere else, has for its foundation a trauma. The appendix is most subject to trauma of any organ. The consequence is, infection is more likely to occur from it, either acute or chronic, than from any part of the abdomen.

DR. DONALD MACOMBER, Boston: Dr. DeLee mentioned familial sterility, but I think he overlooked the fact that all members of the family are subject to the same environmental influences as well as to heredity. I am rather doubtful about such a thing occurring. There certainly can be no question that malnutrition may be the cause of faulty development of the pelvic organs. I think it is more frequent that malnutrition during puberty rather than during infancy is the cause. I agree with Dr. Holmes that it is important to examine the man in every case. It is very important that the one man examine both man and woman. I think many cases fail when the men are referred to another specialist. I have found very little difficulty in having the men come in. I want to make one other point, and that is that in the past it has been the custom not to consider a case one of sterility until some years have elapsed after marriage; and if a couple consult a practitioner before that time has elapsed, they are very apt to be turned away and told to wait a little longer. I believe that it is a dangerous thing to tell the patient this. It is the early treatment in these cases in which there is some functional disorder that prevents subsequent sterility of a pathologic nature from developing. If one wants to prevent sterility one should examine the patient early. One should remember that normal persons have difficulty in preventing pregnancy, that pregnancy occurs at will. If one finds that pregnancy does not occur, certainly an examination should be made to determine the cause, because it is on those cases that one can do the most, and very seldom is operation required.

DR. W. L. ESTES, JR., Bethlehem, Pa.: There are only two points I want to touch on. One is that Tuffier's operation, or the uterine horn splitting operation, requires that the pedicle giving the blood supply to the ovary be preserved. When the ovary is completely detached and implanted in the uterus, it has been necessary to remove the uterus by hysterectomy later on, and complete atrophy of the ovarian tissue has been found; nothing but fibrous tissue was left. As for the point Dr. Morris brought out with regard to splitting the tube in a patient with pyosalpinx, mention of that was made in my previous paper. I am very grateful for his statement that pregnancy has been obtained by this procedure.

Sea Food Polluted by Oil.—The oily taste acquired by sea food in the presence of oil pollution has been frequently observed. It is stated that clams and other sea food not only fail to reach the proper maturity under such conditions, but apparently contain a perceptible amount of the contaminating material, even after the food has been cooked. It is understood that shellfish taken from Jamaica Bay, N. Y., are not permitted to be sold, because of the very badly polluted condition of the waters in this locality caused by sewage and oil.—*Pub. Health Rep.* **39**:1658 (July 11) 1924.

SPONDYLITIS FOLLOWING CEREBRO-SPINAL MENINGITIS *

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This paper is based on a study of thirty-five cases in which there was the complaint of persistent back symptoms dating from attacks of acute meningitis. Thirty-three of these patients were ex-service men whose trouble began during the World War, and who came under my observation during the last five years while I was acting as consultant to our local unit of the Veterans' Bureau. The other two were seen while I was in civil practice, one a boy, aged 12, who had had meningitis five years before, and the other a man of 32, the onset of whose trouble dated back fifteen years; both had had pain and stiffness in the lumbar spine ever since. These two patients were seen by courtesy of Drs. Jack Witherspoon and W. C. Dixon.

Fig. 1.—One of the two cases in which the pathologic change was not limited to the lower lumbar spine. There is slight lipping at the third and fourth lumbar vertebrae, more marked at the joint between the first and second lumbar vertebrae, where the disk is also damaged.

In a paper on "Low Back Pain" read before the Southern Medical Association in November, 1922, I[1] referred to some of these cases and considerable interest was expressed by some of those present, with the request that I make a fuller report of my findings. This, and the fact that I have not been able to find any reference in the literature to spinal pathologic conditions attributable to meningitis have prompted me to present these observations here for what they are worth.

For the sake of convenience and brevity in this discussion, I have divided the thirty-five cases into three groups: (1) patients with spinal osteoarthritis with positive roentgenograms; (2) patients with physical signs of spondylitis, but with negative roentgenograms, and (3) patients with no definite signs of spondylitis.

* Read before the Section on Orthopedic Surgery at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

1. Billington, R. W.: South. M. J. **16**: 478 (June) 1923.

PATIENTS WITH SPINAL OSTEARTHRITIS

Group 1 includes fourteen cases, in all of which definite roentgen-ray evidence of spinal osteartbritis was obtained; this includes the two civilian cases already mentioned.

The ages of the patients, with the exception of the boy whose age was 12, ranged from 22 to 35 years. All had had numerous spinal punctures and antimeningitic serum. All complained of persistent pain and stiffness in the lumbar spine, beginning either during the acute or during the convalescent stage of the meningitis. Active foci of infection were found in only two, and only one patient had had other arthritis (hip joints). In four, the pain was in the lower back only, the other ten having in addition more or less pain referred to one or both of the lower limbs. One had sensory changes over the outer leg, with sciatic tenderness and absent knee-jerk; one had peroneal weakness, and two had exaggerated knee-jerks. The other ten had normal reflexes in the lower limbs. Six had frequent headaches. All had more or less stiffness of the lumbar spine. Ten had guarded body movements and involuntary spasm of lumbar muscles. Ten had straightening of the lumbar curve (flat back), and two had fixed lumbar scoliosis. Disability was extreme in eight, and moderate in six. Four had worn spinal braces or jackets, and all had had more or less treatment for back conditions, such as antirheumatic remedies, strapping and physiotherapy. In one of the most severe cases, in which there was partial destruction of the disk between the third and fourth lumbar vertebrae, I did an Albee spinal graft operation four years ago, with complete relief of the pain in the back. He still has occasional headaches and tires easily.

Fig. 2.—Marked lipping of the third and fourth lumbar vertebrae, and partial destruction of disks between the third and fourth and the fourth and fifth.

Probably the most interesting feature of this group was the roentgen-ray findings. In twelve of the fourteen cases, the pathologic changes were limited to the lower lumbar spine (third to fifth vertebral bodies and disks). These changes consisted of lipping, spurring and other hypertrophic changes in all of these twelve cases, while in seven there was also the thinning or destruction of a disk between the third and fourth or between the fourth and fifth lumbar vertebrae, together with roughening of adjacent body surfaces. In one case there was slight hypertrophy in this region, plus a thin disk and distinct lipping at the joint between the first and second lumbar; in the other, a general hypertrophic spondylitis as in the ordinary deformans type. In none did the picture suggest Pott's disease, and none showed any evidence of psoas or lumbar abscess.

PATIENTS WITH SIGNS OF SPONDYLITIS WITH NEGATIVE ROENTGENOGRAMS

Group 2 includes five cases, in which the ages of the patients ranged from 24 to 28 years. There were fairly definite symptoms and physical signs of spondylitis without positive roentgen-ray findings, although in two cases the roentgenograms were suggestive of very slight hypertrophic changes in the lower lumbar vertebrae. The symptoms and signs were generally less marked than in the previous group, but were otherwise very similar. All the patients had had several spinal punctures and serum treatment, and pain and stiffness in the lumbar region had been constant ever since. In only one case was pain referred to the lower limbs. Three patients had had repeated exacerbations of symptoms. No infectious foci were noted, and none had a history of other arthritis. No atrophy or sensory changes were found. All had limited and painful lumbar movements and muscle spasm. The only deformity was one straightened lumbar curve. Disability was marked in four patients, and moderate in one. Two had worn spinal braces, and all had received more or less palliative treatment. This group of patients appeared to have a mild degree of spondylitis, chiefly lumbar, without sufficient bone or joint changes to show in roentgenograms.

Fig 3.—Hypertrophy of the fourth and fifth lumbar vertebrae and destruction of the disk between the fifth and sixth. This man's trouble began with meningitis fifteen years before.

PATIENTS WITHOUT DEFINITE SIGNS OF SPONDYLITIS

Group 3 includes the other sixteen patients who showed very slight or no spinal stiffness, muscle spasm, guarded movements or persistent faulty posture; i. e.,

no definite signs of spondylitis. Roentgenograms made of a few patients were negative. Their ages were between 23 and 34. One of them had a partially stiff wrist joint resulting from a mild suppurative process occurring during convalescence from the meningitis. They complained of some or all of the following symptoms: low back pain, which was worse on exertion; headaches, general weakness, nervousness, pains, weakness and numbness in the lower extremities. This group is rather indefinite and will not be discussed here, but it probably includes psychoneuroses, malingerers and some who may have had a mild spondylitis.

COMMENT

That the meningococcus can produce an arthritis has been demonstrated in the case of other joints. As early as 1898, Still recovered the organism from a joint so infected, and Gwyn did the same the following year. Herrick and Parkhurst reviewed in 1919 a series of 321 cases of meningococcic arthritis of various joints of the extremities, some of these containing a viscid and semipurulent exudate. Sainton and Bosquet and Rogu have reported cases resulting in ankylosis of the knee, hip and shoulder. Only one of my patients had a joint, other than of the spine, involved; this was the wrist joint referred to in Group 3. In this case, healing was accomplished when I saw the patient, and, of course, evidence could not be obtained bacteriologically. However, the occurrence and the course suggest this origin.

The older writers, before the days of antimeningitic serum, referred to arthritis as a fairly frequent complication, but I have found no special reference to spondylitis. I have wondered whether arthritis of other joints (which is metastatic) has been less frequent since the use of the serum treament, as it appears from this series, and whether spinal arthritis has become more frequent, as the result, possibly, of trauma or the direct inoculation of the spinal structures by the needle in spinal punctures. The localization of demonstrable pathologic conditions in most of my patients (twelve out of fourteen) in the lower lumbar spine is strongly suggestive of the latter. Not infrequently, in making spinal punctures the point of the needle is thrust against the anterior wall of the spinal canal after it has passed through infected tissues within the canal, producing an ideal means of inoculating the vertebral bodies or disks in this region. If the spondylitis were due to trauma alone, or to extraneous infection carried in by the needle, we should expect to find this condition resulting from punctures for other conditions, such as those employed in the diagnosis and treatment of syphilis. While I have made extensive search and inquiry, I have not found a case in which this has occurred.

Fig. 4.—Hypertrophic changes at fourth and fifth lumbar vertebrae, and involvement of the disk between.

It has not been demonstrated bacteriologically that the meningococcus was the causative organism in any of this series of cases, all of which were seen long after the stage of active infection. Indeed, it would seem practically impossible to obtain exudate or other tissues for such study even during the acute stage, except at necropsy. I do not know whether such study has ever been made. I hope that this report may cause some one to make this investigation when the opportunity is afforded.

Although most of these are compensation cases and are thus open to the suspicion of malingering or of the patient's trying to establish a false connection between the meningitis and the spinal disease or complaint, I am convinced that, in practically all the cases listed in Groups 1 and 2, there was a very definite relationship between the meningitis and the beginning of the back trouble.

The histories and reexaminations of many of the patients, covering a period of from five to fifteen years after the onset, show the usual course to be one of severe back symptoms during the first few weeks or months, followed by more or less gradual improvement, often with exacerbations, leaving the patient more or less permanently disabled. This would seem to be of particular interest to the Veterans' Bureau.

The man on whom I did a spinal graft, though his was one of the most severe cases, with marked destruction and hypertrophic changes at the joint between the third and fourth lumbar vertebrae, made an unusually good recovery after being practically totally disabled for two years. One such case, of course, is not conclusive, and this plan of treatment should probably be reserved for the more intractable cases, at least. Those patients who wore jackets or well-fitted braces obtained more or less relief from them. From this, it would appear that plaster or celluloid jackets should be applied early, before the patient begins to get about, if he has marked pain, stiffness and muscle spasm in the lumbar region. Roentgenograms made at that time may be negative, but this should not delay the immobilization, which would not only add to the patient's comfort, but might lessen the amount of permanent damage to the spine by the disease, whatever its origin. Granting the possibility of needle punctures as a causative factor, particular care should be taken to avoid pushing the needle point far enough to strike the anterior wall of the canal, or otherwise traumatizing any part of the spinal column. This will, no doubt, often be unavoidable.

SUMMARY

In nineteen cases there were definite clinical evidences of spondylitis. In fourteen of these there were positive

roentgenograms, and twelve of the fourteen showed pathologic changes only in the lower lumbar region (third to fifth); these changes were hypertrophic in all twelve, and in eight of the twelve there was also partial or complete destruction of a disk in the same region.

These facts, together with the histories, especially when the ages of the patients, the time and nature of the onset, and the course of a subacute arthritis of the spine are considered, seem to me to form a fairly definite picture, differing from that of other types of infectious spondylitis and pointing to the meningococcus as the causative organism. Since spinal joints are susceptible to practically all the other varieties of arthritis found in other joints, there appears to be no reason why the spine should be immune to the meningococcus.

Moreover, the spinal puncture needle may easily afford a direct means of inoculating the lower lumbar vertebrae and disks with the meningococcus and, in view of the location of the pathologic conditions in the cases recorded, it appears very probable that it is an important etiologic factor. The two cases in which there were pathologic changes in other regions may represent metastatic infections, such as occur in the involvement of joints of the extremities, though apparently less frequently.

Treatment should be early and prolonged immobilization.

Clinical Notes, Suggestions, and New Instruments

THE TREATMENT OF INGUINAL HERNIAS IN YOUNG INFANTS

L. Charles Rosenberg, M.D., Newark, N. J.

The treatment of inguinal hernias in infants only a few weeks old is always difficult. Appliances for this purpose are numerous. The most popular are the old-fashioned steel truss and the newer yarn truss of Fiedler.

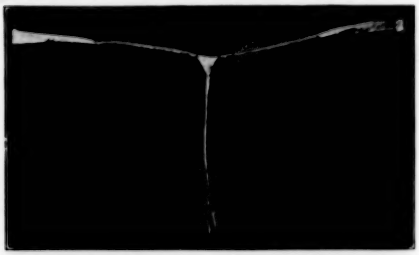


Fig. 1.—Truss for inguinal hernia in young infants.

Objections to the former are many. It is cumbersome and generally fails to accomplish its purpose. The objections to the latter are that some skill and experience are required for its proper application, and this is usually not possible for the average mother.

The great objection, however, to these and all other varieties is excoriation, to say nothing of the danger of infection. This is especially true in the case of the wool truss, which becomes soaked with urine and feces.

Any truss applied to very young infants, particularly those that are premature, must be soft, so as not to irritate the tender skin; it must be simple enough so that it can be changed by the mother when it becomes soiled, and it must keep the hernia reduced.

A truss that answers these requirements consists of a triangular pad stuffed with absorbent cotton. To each corner of the pad there is attached a muslin tube about 1 cm. in diameter and 15 cm. in length also stuffed with cotton. The material used is preferably soft muslin.

To apply the truss, the pad is placed over the hernia and one string passed over each iliac crest to be tied behind in the lumbar region. The third string is brought downward between the thighs and thence backward, and is tied posteriorly.

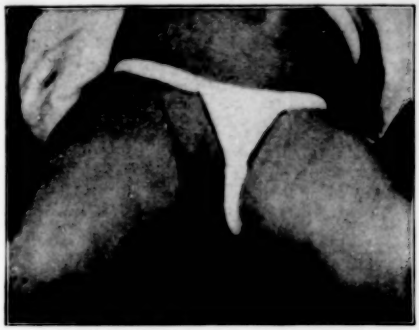


Fig. 2.—Truss in place.

It may be necessary to use two or three new trusses a day, but devoted mothers do not consider this troublesome, since they are easily made.

When double hernias exist, a double pad may be made, one to fit over each external ring.

This truss is not recommended for older infants.

39 Lincoln Park.

CONGENITAL HYPERTROPHIC PYLORIC STENOSIS IN TWINS

Herbert H. Davis, M.D., Omaha

H. Leslie Moore[1] recently reported the occurrence of hypertrophic pyloric stenosis in twins. At 4 weeks of age each had a Rammstedt operation. Each did well at first, but this lasted only a few days, and they both died of respiratory paralysis, six and eight days after the operation. Moore states that he has been unable to find any other case of this malady in twins in the literature. He also says that it would be interesting to know whether it ever occurred in one twin and not in the other.

In 1919, I observed a similar condition in twin boys, born Oct. 14, 1919, and referred by Dr. Clyde Moore.

REPORT OF CASES

J., the first infant, did well until 13 days old, when he began to vomit. At that time he vomited practically everything he ate. At birth, he weighed 5 pounds, 12 ounces (2.60 kg.) and at 2 weeks gained to 6 pounds, 4 ounces (2.83 kg.) but in a few days before operation lost to 5 pounds, 7 ounces (2.45 kg.). November 11, at the age of 28 days, a Rammstedt operation was performed by Dr. B. B. Davis. Physical examination at that time revealed considerable abdominal distention, and, on palpation, a small hard mass 1¼ inches to the right and a little above the umbilicus. Operation showed this mass, as was expected, to be the fibrous pylorus. This mass was divided with practically no bleeding. After the operation, the weight went down to 5 pounds, 5 ounces (2.40 kg.) but, November 17, the infant was gaining again

1. Moore, H. L.: South. M. J. 17: 187 (March) 1924.

and eating nicely. The weight had increased to 5 pounds, 11 ounces (2.57 kg.) by November 29, when the infant was dismissed in good condition.

T., the second infant, at birth weighed 5 pounds, 14 ounces (3.56 kg.). He was well until 29 days old, at which time he weighed exactly 7 pounds (3.17 kg.). At this time, he began vomiting, and had symptoms similar to those of his twin brother. A small mass could be felt at the location of the hypertrophic pylorus. The upper abdomen was distended, while the lower abdomen was flat. He lost 1 pound (0.45 kg.) in five days, weighing at the time of the operation exactly 6 pounds (2.72 kg.). November 17, a Rammstedt operation was performed. The stomach was found greatly distended, and the pylorus hypertrophied and very fibrous. When the fibrous tissue was split, it was found to be nearly half an inch thick. Following the operation, the infant began to eat well and gain weight, and was dismissed, November 29, in excellent condition.

About a year later, the mother came to the office and proudly announced that the twins had just won first prize for twins at a baby show.

1200 First National Bank Building.

A LIGHT AEROPLANE SPLINT THAT PERMITS MOBILITY OF THE ELBOW

C. H. BALDWIN, M.D., UTICA, N. Y.

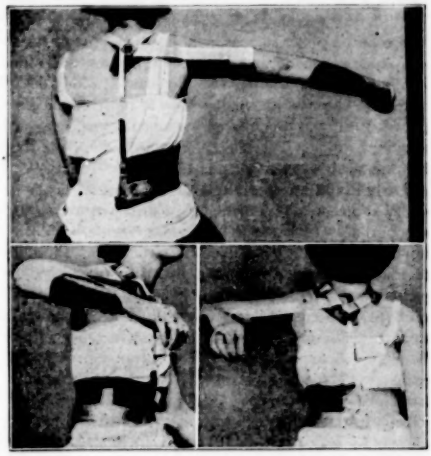
Various splints for holding the arm in abduction while treating various conditions involving the arm and shoulder have been described. Many of the splints do not abduct the arm; practically all of them are bulky; many are difficult to hold in position, and none, so far as I have been able to find out, permit free motion of the elbow. In producing any splint or brace that is to be used over a considerable period, there are three things that demand attention: it must be efficient, practical and comfortable.

Unless a brace fulfils these requirements, it is in a measure a failure. Removable abduction splints are notoriously uncomfortable and are difficult to maintain in position. Unless they are maintained in proper position, they fail to accomplish their purpose. Fitchet and Thorndike[1] have called attention to the fact that most abduction splints fail to abduct properly the humerus because motions of the scapula are not controlled. They have described a wire splint. I have used the mechanical principle of this splint, but have changed the materials used in order to obtain lightness, more accurate fit and greater comfort. A joint that permits mobility of the elbow has been added. My observations have been, in addition to this, that most abduction splints are difficult to hold in position, as a good grasp of the trunk is not obtainable because the splint does not fit accurately, this being especially true in heavy persons. When made to remain in a relatively good position, the lashings to the body are so many and so complex as to be unpractical in the hands of the average individual. The element of comfort has received little consideration. Comfort depends on fit, lightness of construction and broad bearing surfaces. The brace described here seems to fulfil the essentials mentioned. It will hold the arm in abduction; it is light, is not uncomfortable and is readily adjusted. It may be easily and inexpensively made.

The brace consists of a pelvic band extending half way round the body. This band should roughly follow the curve of the crest of the ilium below the iliac crest, so as to obtain a bearing surface on the pelvis. There is an anterior upright, extending from just below the sternal notch to the pubis, and a posterior upright, extending from the second or third dorsal vertebra to the top of the sacrum. Horizontal bars extend from the uprights to about 2 inches back of the internal condyle of the humerus; these are connected by a metal band. A simple joint is attached to the under surface of this band. The long arm of this joint extends as a single piece to the palm of the hand. The pelvic band is made of galvanized iron, gage 16, 1½ inches wide. Horizontal bars are of the same material, 1 inch wide. Uprights are of cold rolled steel, one-half by one-eighth inch. In order to furnish broad bearing surfaces, and not materially increase the weight, vulcanized fiber is used to increase the width of the pelvic band and to make a trough in which the arm lies.

The following measurements should be made with the arm held in abduction and the elbow flexed to 90 degrees: (*a*) sternal notch to bend of elbow; (*b*) sternal notch to symphysis pubis; (*c*) second dorsal vertebra to bend of elbow; (*d*) second dorsal vertebra to top of sacrum; (*e*) circumference of pelvis just above great trochanter; (*f*) circumference of arm above elbow; (*g*) circumference of forearm below elbow; (*h*) internal condyle of humerus to palm of hand, and (*i*) internal condyle of humerus to chest wall.

The following tracings should be made with the patient standing, arm held in abduction, elbow flexed to 90 degrees: (*a*) sternal notch to bend of elbow; (*b*) sternal notch to symphysis pubis; (*c*) second dorsal vertebra to tip of olecranon, and (*d*) second dorsal vertebra to top of sacrum.



Light aeroplane splint that permits mobility of elbow.

Measurements and tracings may be made and sent to the brace shop, or the parts that are to be used in the brace may be bent to the desired shape, the patient being used as the model. The latter method is just as easy as making tracings, and results are more satisfactory. No tools aside from a good bending iron are needed. The parts are plainly marked and sent to the brace shop, together with the measurements. It is only necessary to bend the pelvic band, the two uprights and the horizontal pieces. The brace is held in position by completing the pelvic girdle with a piece of 3 inch webbing. A piece of 3 inch webbing is fastened to the posterior upright, just below the horizontal bar. It is made sufficiently long to pass about the chest, under the anterior upright, and buckle. Two pieces of 1 inch webbing are attached to the upper end of the posterior upright. These pass over the base of the neck and buckle to the top of the anterior upright.

Mechanically, it is much easier to construct a brace of the kind described, using flat materials and riveting the pieces together, than to bend a piece of round steel rod to the desired shape and make it fit. The use of flat materials permits the construction of a brace that is sufficiently rigid without the use of a strut between the pelvic band and the elbow or forearm. The omission of the strut and the accurate fit make it possible to wear the brace under a waist or coat.

1. Fitchet, S. M., and Thorndike, Augustus: An Improved Aeroplane Splint Designed for the Treatment of Certain Fractures, J. A. M. A. 82: 1120 (April 5) 1924.

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SATURDAY, AUGUST 30, 1924

THE ETIOLOGY OF MEASLES—A RETROSPECT

With the recent definite promise that scarlet fever will soon be under scientific subjugation,[1] the attention of physicians is turned more hopefully toward other baffling maladies that have been somewhat glibly designated as "diseases of childhood." It represents a progressive attitude when even laymen no longer regard them as trifling. There are communities in which they have not yet become "attenuated" in their effects.

Early in the era of modern bacteriology, when almost every succeeding year brought the discovery of a germ responsible for some long recognized disease, we looked forward hopefully to the scientific control of all infection and contagion. With the passage of the years, the persistence of obscurity with respect to the etiology of some of the commonest of human maladies and the repeated failures to find their causative agents have brought about a feeling of discouragement. The etiology of the exanthems of man has in particular remained one of the most perplexing problems in medicine. In one respect, however, the situation that has developed may prove to be beneficial in the long run. Investigators have begun to turn away from the tried and conventional methods of study, to bring new forces for attack, to acquire different points of view as to the possibilities of diseases of microbiotic origin. The "virus" is no longer conceived of as necessarily a typical bacillus or micrococcus; it may be protozoan in type, or it may belong to the still indefinite category of filtrable viruses. The mind of the investigator of today has ceased to remain "single tracked" with respect to etiologic factors; and he is also less likely to be carried away by the hasty report of a reputed "discovery" of the cause of a baffling disease like measles.

It seems worth while, however, to survey the present status of our knowledge from time to time. In a critical review of the problems of the etiology of measles, Sellards [2] has explained why the clinical features indicate that the exanthem is caused by the presence of a specific micro-organism and not solely by a toxin. The generalized rashes caused by agents in solution, such as drugs and serums, make their appearance irregularly over the surface of the body. Areas that are widely separated may become involved simultaneously. In measles there is a definite and rather gradual progress of the rash from the uppermost parts of the body downward over the trunk, arms and lower extremities.

Nevertheless, the search for the parasitic invaders by microscopic examination has failed to demonstrate constantly or consistently present forms in the Koplik spots or skin lesions of measles. Microscopy of the blood has likewise afforded only negative results; yet there are evidences of the presence of the virus in the blood stream, if one may trust the reports of experimental inoculation of measles in man with the blood of measles patients.[3] The tests on animals have proved somewhat unsatisfactory because of the difficulty of identifying the exanthems. The "experimental measles" produced in monkeys by various sorts of inoculation are suggestive, though they by no means offer exact proof of the susceptibility of these animals to the human disease. The conclusion that the virus of measles is filtrable rests primarily on such animal tests. Sellards prefers to consider the filtrability an entirely open question. He states that the symptoms in rabbits appear even less definite than those described in the monkey, and the evidence that the virus survives in rabbits rests, in large measure, on the reinoculation from rabbits to monkeys. Acceptance of the susceptibility of rabbits and guinea-pigs to measles, or even the survival of the virus in these animals, is not warranted on the evidence that has been submitted.

At most, then, it can be said that the symptoms of measles, the mode of infection and the resulting immunity suggest that the causative agent is not a typical protozoan; it may not unlikely prove to be a member of the general group of bacteria or the bacteria-like micro-organisms, either visible or ultramicroscopic. The fever, leukopenia and rash, either of the skin or of the mucous membranes seen in the monkey experiments and regarded as characteristic of experimental measles, Sellards regards as too mild to determine convincingly the etiologic relationship of suspected micro-organisms isolated from patients.

Sellards' outlook on the cardinal problems yet to be solved in measles includes the demonstration of the causative agent, its cultivation, and the infection of lower animals in such a manner as to provide a reliable and practical method for the recognition of the virus. By contrast with measles, Sellards points to a disease, such as spotted fever, in which the causative organism is readily demonstrated microscopically in tissues, and which produces in guinea-pigs a fatal infection with characteristic lesions. In any attempts at cultivating this organism, he adds, suspected cultures can be tested

1. Scarlet Fever—the Outlook, editorial, J. A. M. A. **82**: 1266 (April 19) 1924.
2. Sellards, A. W.: A Review of the Investigations Concerning the Etiology of Measles, Medicine **3**: 99 (May) 1924.
3. Hektoen, Ludvig: Experimental Measles, J. A. M. A. **72**: 177 (Jan. 18) 1919. The Transmission of Measles Through Transfusion of Blood, Current Comment, ibid. **82**: 1448 (May 3) 1924.

readily and conclusively. However, in measles, in working on any of the three features just mentioned, it is necessary to contend with two unknown factors. This is the situation in the midst of which we must join to encourage the most patient investigators to remain hopeful and work undismayed with a look forward.

PLASMA PROTEINS IN NEPHRITIS

Studies of nephritis have justified the wisdom of clearly differentiating between the various more or less distinct types of kidney disorder that are involved in the respective cases. Two manifestations, namely, protein in the urine and edema, are observed in many instances and may become the most conspicuous symptoms of the renal impairment. Attention has been directed in recent years, notably by Epstein,[1] to an apparent depletion of the blood in plasma proteins in certain forms of tubular or glomerulotubular nephritis, to which the name nephrosis has of late been applied. He attributes the attendant edema to a fall in osmotic pressure of the plasma consequent on its low protein content. This, together with the urinary loss of protein, seemed to justify replenishment by a more liberal protein intake; thus, the possible therapy of the malady might well be determined by the character of the changes in the protein balance or equilibrium in the body.

A reinvestigation of the problems involved, at the Hospital of the Rockefeller Institute,[2] shows clearly that there are sharp differences between various types of nephritis with respect to the protein factors discussed. In the vascular-interstitial type, as in nephrosclerosis, there is no decrease in plasma proteins until shortly before death. In so-called "functional proteinuria," likewise, no change was found. In the glomerulotubular or nephrotic renal disorders, however, the total plasma proteins were usually reduced in percentage. The decrease affected chiefly the albumin, the globulin being usually only little diminished and sometimes slightly increased. The fact that in nephrosis the greatest edema did not correspond with the most marked reduction in plasma protein concentration militates against a causative relationship between these two symptomatic factors. Increase in plasma proteins by no means always determined a change for the better in stages of fully developed edema, although, with the disappearance of the latter, an increase usually did occur. Low plasma proteins were always associated, in the New York cases, with considerable losses of protein in the urine; but these did not provide an explanation for all the observations.

It has been suggested that fall in the concentration of plasma proteins is an index of dilution of the blood—"an edema of the blood itself." The observations of Linder, Lundsgaard, Van Slyke and Stillman[3] show that, even when the protein content is much below normal, "hydremic plethora" does not exist. The conclusion seems imperative, therefore, that the low protein concentration frequently observed in the plasma in nephritis is due, not to increased plasma volume but to a decrease in the total amount of plasma protein in the body. Incidentally, it may be recalled that in some cases of nephritis there is a large increase in the blood lipoids. This is not due to any inability of nephritic patients with lipemia to burn fat as efficiently as normal persons do, as actual metabolism measurements by Hiller, Linder, Lundsgaard and Van Slyke[4] show. They conclude that the accumulation of fat noted in the blood may be due to a disturbance in the mechanism for transferring lipoids from the blood to the tissue depots. The upshot of recent studies of the New York clinicians is that two factors are probably responsible for the changes in the plasma protein concentration in nephritis. They are, first and more important, a disturbance in the mechanism of their production consequent on the nature of the disease, the presence of infection or toxemia, and dietary vagaries; and, second, the loss in the urine of large amounts of protein, particularly albumin. Although low protein concentration and edema frequently occur together, their relationship, we are told, is not a simple one of cause and effect. Van Slyke and his associates think that these factors and the increase in blood lipoids are probably the expression of an underlying metabolic disorder of a fundamental nature. This places nephrosis in a new and somewhat more formidable category of disease.

BLUE SCLEROTICS AND BRITTLE BONES

Modern biology has given a highly scientific formulation to the phenomena of heredity. In many details, the "laws of inheritance" have become firmly established, not as the result of conjecture and traditional beliefs, but rather on the basis of statistical study or more exact experimentation. Heredity not only is responsible for the regular recurrence, in successive generations, of the structural features and physiologic functions that constitute the very essence of life and the fundamental characteristics of the species; it also has been found to account for many of those perplexing variations that disclose unlikeness where similarities might have been expected. Blue eyes instead of brown, red hair instead of darker hues, a small stature amid a family group of large build—such seeming anomalies often serve to indicate latent characteristics that crop out only occasionally, though by no means always "without rhyme or reason," in the sequence of offspring from a common stock. There are periods in inheritance when dominant characteristics give way to recessive traits. This does

1. Epstein, A. A.: Am. J. M. Sc. **154**: 638 (Nov.) 1917; **163**: 167 (Feb.) 1922.
2. Linder, G. C.; Lundsgaard, C., and Van Slyke, D. D.: The Concentration of the Plasma Proteins in Nephritis, J. Exper. Med. **39**: 887 (June) 1924.
3. Linder, G. C.; Lundsgaard, C.; Van Slyke, D. D., and Stillman, E.: Changes in the Volume of Plasma and Absolute Amount of Plasma Proteins in Nephritis, J. Exper. Med. **39**: 921 (June) 1924.
4. Hiller, A.; Linder, C. G.; Lundsgaard, C., and Van Slyke, D. D.: Fat Metabolism in Nephritis, J. Exper. Med. **39**: 931 (June) 1924.

not mean that like fails to beget like; for not all the potent hereditary factors are always apparent before they are brought to light by genetic analysis.

The doubt that has been cast with good cause on the older belief that acquired characters, changes occurring during the lifetime of the individual, can be inherited is at length profoundly modifying the theories of inheritance of disease. Among the long list of maladies that were often described as hereditary in an earlier period, there are scarcely any remaining in which heredity can by any stretch of argument be assumed to play a directive part. It is, of course, true that children are at times born with the "taint" of disease; the latter is, however, the result of direct infection rather than inheritance. Thus it has come about that such expressions as "hereditary syphilis" have been replaced by the correct designation of "congenital syphilis."

Shall we then say that there is no such thing as disease extending "unto the third and fourth generation?" Yes, perhaps, so far as the stigmas of infectious character are concerned. There are, however, disorders and anomalies—departures from the normal structure and function of the species—that may persist through successive generations of offspring, usually making themselves known in an occasional descendant of a common affected ancestry. Alkaptonuria, cystinuria and pentosuria, for example, represent admitted types of inborn errors of metabolism, if they may not properly be designated as hereditary diseases. The metabolic error is usually not complete, and consequently the involved persons frequently, if not usually, survive without serious detriment. Only now and then do the "chemical malformations" betray themselves, sometimes because of chance accidents for which the usually tolerable anomalies may become responsible. A remarkable instance appears to be represented by persons in whom blue sclerotics, fragile bones, and otosclerosis are present. That such unique coloration of the sclera may be associated with one or the other of the additional symptoms just referred to has been noted in clinical writings on numerous occasions.

An elaborate discussion of the syndrome has recently been published by Stobie[1] of Oxford, England. Out of a family of sixty-six persons belonging to five generations, at least eighteen were affected. The tint of blue in the sclerotics, though present in all this group, varied, the depth of coloration bearing no evident relation to the grade of severity of the other symptoms. In no case were brittle bones or deafness found in the absence of blue sclerotics. The deafness is not present at birth, but for some unknown reason begins to manifest itself in the second or third decade. Reference to the "family tree" shows that the transmission of the features under review is direct from one generation to the next. There is no instance of a generation having been skipped. It is transmitted through both male and female, and no case has come under notice in which an unaffected member has an affected descendant. The bones in these persons were more delicate in structure than usual, according to evidence furnished by roentgen-ray examination. The exact cause of the syndrome and its pathology are at present uncertain. As in the case of other "inborn errors," the disorder does not appear to shorten life in any way. The records now available may help to preserve a wholesome respect for the profound influence of heredity, even though we no longer link it, as formerly, with infectious disease.

1. Stobie, W.: The Association of Blue Sclerotics with Brittle Bones and Progressive Deafness, Quart. J. Med. 17: 274 (April) 1924.

Current Comment

HEAT REGULATION AND WATER LOSS

Heat is a product of metabolism which, under ordinary circumstances, is not allowed to accumulate in the body. The removal of the excess of heat, so that the temperature of the organism may remain within its normal ranges, is facilitated by a variety of processes. Part of it can be lost through conduction and convection, or radiated to the surrounding atmosphere; the rest can be removed only as latent heat of vaporization. For the success of the latter type of heat loss from the body, the perspiration is usually held responsible, along with the fraction that is eliminated with the water vapor in the expired air. In this way the respiratory surfaces are concerned with heat elimination. It has not been easy to determine the relative importance of the different modes of heat dissipation; yet heat control is of preeminent significance for the body's well being and for the physical comfort of man. There are species that have no sweat glands and consequently cannot lose heat through the evaporation of sweat. Keeton[1] has maintained rabbits under conditions in which any radiation or conduction was practically excluded, so that other modes of loss became necessary if a rise in body temperature was to be averted. It was shown to be virtually impossible for the animals to develop sufficient ventilation to eliminate all the heat formed through the respiratory surfaces; consequently, it must have disappeared through the peripheral surface in the form of latent heat of vaporization. In the rabbit, devoid of sweat glands, the water thus involved must be eliminated by a process of direct vaporization, according to Keeton's conception. He contrasts this water loss sharply with that developed by the sweating mechanism. Sweat, Keeton argues, is a form of indirect loss of water; it is separated from the tissues in the liquid phase, and undergoes vaporization only after reaching the surface. The demonstrated possibility of a direct vaporization recalls at once the so-called "insensible" perspiration of man. By most investigators, this has been regarded as associated in some way with the activities of the sweat glands. We must now take into consideration the possibility of a direct vaporization from the tissues, independent of the ordinary phenomena of perspiration.

1. Keeton, R. W.: The Peripheral Water Loss in Rabbits as a Factor in Heat Regulation, Am. J. Physiol. 69: 307 (July) 1924.

It may help to explain the heat regulation in those exceptional persons who have a congenital lack of sweat glands; likewise in infants at an age when the function of perspiration is not fully developed, yet when the peripheral loss of water is considerable. As Keeton views it, man may probably make continuous use of the constantly acting "tissue vaporization," and may depend on the discontinuous method of sweating only when heat accumulates in the body to such an extent as to initiate a rise in body temperature that provokes unusual devices for relief into activity.

A NEW DIRECTORY

The biographic department of the Association is now actively engaged in compiling and revising the material for the Ninth Edition of the American Medical Directory. The Directory is one of the altruistic efforts of the Association in the interests of the medical profession as a scientific organization, which means, ultimately, the interests of the public. It is a book in which dependable data are found concerning physicians and hospitals in the United States and Canada. This note is inserted to ask the cooperation of those physicians who are readers of THE JOURNAL. In the next ten days, every physician in the United States and Canada should receive by mail a directory information blank. While it is hoped that every one will fill out and return the stamped card promptly, those who have changed their residence or office address since the revision of two years ago are especially urged to respond.

CHEAP METHODS FOR CHEAP DOCTORS

Modern advertising methods are certainly not an unmixed blessing. Practically every philosophical observer of current American life will agree with this dictum. Indeed, the advertisers themselves have begun to see the light, and the fantastic blurbs of the automobile advertisements of a few years ago, for example, are giving way to simple statements of quality and price or requests to submit the goods for inspection. Parenthetically, it is almost axiomatic that, the more flashy the claims, the more shoddy the material. Advertisers who are endeavoring to reach the modern physician have also begun to realize that they are appealing in the main to scientists who are inclined to be a little skeptical of exaggerations and to busy practitioners who have no patience with overstatement. Skirmishing about the outskirts of scientific medicine, however, and now and then making a vicious foray into the camp, one finds the rear guard of a departed generation. Its weapons in the assault on the physician's pocketbook are the old glaringly colored reproductions of misshapen organs, the charts of spotty and distorted bacteria, the caricature and the snappy saying, and the beseechment to purchase extraordinary office devices for their psychologic effect in producing increased profits. The most recent evidence is an invitation on the type of postcard and with the same caricature usually used to announce the impending visit of a traveling salesman. Unfortunately, it is devoted this time to the announcement of a commercial clinic to be held in a western city. Such appeals can have no interest for an honest, scientific physician, since they are carefully gaged no higher than the intelligence of, at most, a half educated cultist. They are cheap methods for cheap doctors!

CHLORIN INHALATIONS IN RESPIRATORY INFECTIONS

Last March, THE JOURNAL published an article by two physicians in the Army medical department, listing their results with the use of chlorin inhalations in the treatment of respiratory infections. The work was done in the laboratories of the Chemical Warfare Service, and received wide publicity through both the medical and the lay press. Among the reasons for this publicity was the fact that this represented perhaps a special industrial application of war gases to civilian purposes, and also that it was, in its essential aspects, new. Furthermore, the method was applied, in the first instance, to certain notables of the government with apparent benefit. Some six months have elapsed since the treatment was first announced in a scientific communication. Numerous devices have been advanced and advertised in THE JOURNAL and in other medical publications. Several municipal health departments have installed treatment chambers where such devices are undergoing extensive experimentation. Thus far, no other scientific communication than the one first mentioned has appeared in medical literature. It is impossible to state definitely, therefore, whether or not the virtues of the method have been absolutely demonstrated, and it must be considered as still in an experimental stage. The limitations of the use of chlorin in respiratory infections have not been clearly defined. The indications are that chlorin inhalations will not produce bacterial sterilization of the mucous membranes, although they seem to reduce to a considerable extent the number of bacteria found on the tissues. The duration of an adequate treatment, the concentration of gas to be used, the methods by which the gas is to be produced and similar factors are still the subject of experimentation.

Wisdom Obtained by Personal Observation.—It would be absurd to depreciate the value of the many scientific methods of investigation which are available at the present time, but I am sure that a too ready appeal to them is doing much to destroy the initiative in the younger generation to think for themselves. Clinical observation threatens to become a lost art. Radiography and all the modern scientific methods are good servants but bad masters. There is a whole world of wisdom in an anecdote I heard recently. A patient presented himself before a surgeon, armed with a bundle of roentgenray photographs and reports of various kinds. The surgeon put them all on one side and said: "We will look at these presently, but in the meantime just get on to that couch and I will endeavor to find out what you are suffering from. After that, all these things may help to prove whether I am right or wrong." I would insist that our present failing is an overconfidence in modern technic and a lack of appreciation of the value of that wisdom which can only be obtained by personal observation and experience. I would urge the younger generation to think more and observe for themselves, as their forefathers did, and not be so ready to bow the knee in a fanatical worship of so-called scientific methods of investigation and treatment.—Hall, J. Basil: Presidential Address, Annual Meeting, British Medical Association, *Lancet* **2**:151 (July 22) 1924.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

New Health Unit.—A full-time health service has been established in Marengo County with Dr. Kenneth Holden Sutherland, acting health officer. Dr. Sutherland is on the staff of the International Health Board and will be in charge of the work in Marengo County until October 1, when a full-time health officer will be named to succeed him. Marengo is the twenty-fourth county in the state to adopt full-time health service.

Society News.—The second annual meeting of the Southeast Division of the Alabama Medical Societies was held at Troy, August 21, under the presidency of Dr. James M. Watkins, Troy. Among others, Dr. Carroll W. Allen, professor of clinical surgery, Tulane University of Louisiana School of Medicine, New Orleans, spoke on "Operations on the Anal Canal Under Local Anesthesia," and Dr. Richard A. Barr, professor of surgery, Vanderbilt University Medical Department, Nashville, Tenn., on "Peptic Ulcer."

ARKANSAS

Measles Closes School.—Five rural summer schools in Sharp and Izard Counties have been closed on account of measles.

Hospital News.—The board of directors of the Camden Hospital Association has purchased a site for the Camden Hospital. It is expected that construction will start soon.

Personal.—It is reported that Dr. Morgan Smith, Little Rock, will again become dean of the University of Arkansas Medical Department. Dr. Smith resigned from that position last fall.——Dr. Leonce J. Kosminsky, Texarkana, has been elected president of the Arkansas Elks' Association.

CALIFORNIA

Hospital News.—A site has been purchased on which it is planned to erect a $1,250,000 hospital building for the Clara Bartlett Hospital, Los Angeles.

Indian Medicine Man Arrested.—Rony Dick Wooten, a medicine man of the Wooten Valley tribe of Digger Indians, was arrested, August 14, and placed in Fresno County jail charged with violation of the state medical practice act, it is reported. The defendant admitted he had on several occasions done "a bit of blood letting" at the insistence of members of the tribe. It was the death of three persons following "blood letting" that led to the investigation and arrest.

FLORIDA

Physician Arrested.—Dr. Alvah H. Weathers, Jacksonville, was arrested at Macon, Ga., August 14, on a charge of violating the Harrison Narcotic Law, it is reported.

Hospital News.—Dr. J. Kent Johnston, Tallahassee, has opened a new hospital in Meridian Heights, Tallahassee.——A permit has been issued for a $120,000 building for the Jackson Memorial Hospital, Miami.——A $215,000 building for the Gordon Keller Hospital, Tampa, has been planned.——Dr. Wesley S. Miller, Palatka, is remodeling a building into a thirty bed hospital which will open about October 1.

ILLINOIS

Physician Fined.—Dr. Ira O. Paul, Rockford, was fined $200 and costs, August 15, on a charge of disorderly conduct preferred by one of his patients, it is reported. Dr. Paul was assessed a fine of $200 about a week ago on a similar charge.

State Child Health Council.—The state department of health has arranged for a confereuce at Springfield early in September which will be an organization meeting for the creation of a state council of child health agencies. Every organization which operates on a state-wide scale in the field of maternity and child hygiene has been invited and most of them have accepted the invitation. The object of the council will be to create a clearing house for all problems in the field of child health service, and the first conference is expected to result in the adoption of a constitution and a name for the organization, the election of permanent officers and the appointment of committees.

Medical History of Illinois.—Sponsored by the Illinois state Medical Society, there is being prepared "A History of Medical Practice in the State of Illinois," which will be an historical record of 250 years of medical practice in the state, beginning with the accounts of physicians who accompaneid the explorers in this section, and continuing in sequence to modern times. Since it is the purpose to go to original sources for early historic material, any physician who formerly resided in Illinois, or any descendant of a pioneer physician who has in his possession valuable original data, such as diaries, photographs or other personal material, will confer a great favor by communicating with the Committee on Medical History, Illinois State Medical Society, 6244 North Campbell Avenue, Chicago.

Chicago

Hospital News.—Dr. Frank Deacon has purchased the Jackson Park Hospital, 7531 Stony Island Avenue, for $225,000, it is reported.——Plans are being made for a $300,000 addition to St. Vincent's Infant and Maternity Hospital, 721 North LaSalle Street.

Chicago Medical Society.—At a meeting, August 13, of the program committee of the Chicago Medical Society with officials of the branch societies, plans were made for the weekly meetings of the central society for the coming season to include (1) one meeting a month devoted to thirty minute clinical lectures, three an evening, on related subjects given by the best clinical teachers in the city; (2) one meeting a month devoted to a symposium, the floor to be open to all members for discussion; (3) one meeting a month devoted to prominent out-of-town speakers and (4) one meeting a month devoted to joint meetings with branches of the society, the branch being given the opportunity of presenting the program.

Advertising Specialist Stabbed by Patient.—Henry S. Whitney, M.D., who for years has advertised as an alleged "specialist," was stabbed by one of his "patients" on August 21. According to the newspaper reports, Whitney's assailant was a Polish laborer who was suffering from syphilis. Two years ago Whitney is said to have agreed to cure him and to have taken $150 as an initial fee and since that time to have taken $200 additional. Finally, with only a few dollars left in his pocket, the patient purchased a knife and sought out Whitney. Then, following a torrent of accusations, according to newspaper reports, Whitney was stabbed in the neck. Whitney has figured in the Chicago newspapers at various times, both in the exposure of quacks and in connection with hearings before the state board on revocations of license. In August, 1918, Whitney was cited to appear before the state board of registration to show cause why his license should not be revoked. It was reported at the time that the board suspended sentence in Whitney's case on the assurance that he would cease circulating an advertising booklet. He was still circulating advertising booklets in 1924. During the past few years the English language newspapers of Chicago have been more particular about the class of advertising they carried and Whitney has had to confine his advertising methods to the distribution of booklets written in various foreign languages and to newspapers published by negroes.

INDIANA

Physicians for City Schools.—Four additional physicians and fifteen additional nurses have been appointed to the staff of the Indianapolis public schools for nutrition work which it is planned to expand from the twenty classes conducted last year to fifty nutrition classes for the coming school year. The physicians appointed are: Drs. Robert E. Conway, Cyrus J. Clark, Jr., Ernest M. Haggard and Oliver W. Greer. The work will be supervised by Dr. James H. Stygall, assisted by Dr. Freeman H. Hibben.

IOWA

Physician Honored.—Dr. Henry B. Young, Burlington, a former president of the state medical society, was recently honored by a celebration of his fiftieth year as a medical practitioner. There was an afternoon program at the Crystal Lake Club and a banquet in the evening, at which seventy were present.

Dr. Howard's Successor Appointed.—Dr. Fred M. Smith, Chicago, has been appointed professor of internal medicine and head of the department of theory and practice of medicine at the State University of Iowa College of Medicine to succeed Dr. Campbell P. Howard who resigned to accept the professorship of medicine at McGill University Faculty of Medicine, Montreal (THE JOURNAL, June 21, p. 2057). Dr. Smith graduated from Rush Medical College, Chicago, 1914, and did postgraduate work at the University of London. He is on the staff of the Evanston Hospital, Evanston, Ill.; the Presbyterian Hospital, Chicago, and an instructor of medicine at Rush Medical College.

KANSAS

Hospital News.—Christ Hospital, Topeka, has awarded contracts for a $500,000 building and improvements in the heating plant and laundry.

Acting Dean Appointed.—Dr. Harry R. Wahl, professor of pathology and bacteriology, University of Kansas Medical School, Rosedale, has been appointed acting dean. Dr. Wahl is a graduate of Johns Hopkins University Medical Department, Baltimore, and has been a member of the faculty of the University of Kansas Medical School for five years.

MASSACHUSETTS

Personal.—Dr. Frederick H. Verhoeff, Boston, has been appointed professor of ophthalmic research in the Medical School of Harvard University, and Dr. George S. Derby, assistant professor of ophthalmology, has been appointed Williams' professor to succeed Dr. Alexander Quackenboss, retired.

Course in Public Health.—The department of biology and public health at the Massachusetts Institute of Technology, Cambridge, will offer the degree of doctor of public health to qualified candidates, beginning with the next college year. The degree will be placed on the same level as the degrees of doctor of philosophy and doctor of science, requiring generally at least three years of graduate work for those having the bachelor's degree.

MICHIGAN

City Conducts Medical School.—The Detroit College of Medicine and Surgery, Detroit, has the distinction of being the only school of medicine in the United States which is conducted by the board of education of a city. The administration of the college rests entirely with the board of education of the city of Detroit.

Poliomyelitis in Detroit.—According to the bulletin of the Wayne County Medical Society, seventeen cases of poliomyelitis were reported in Detroit during the first ten days of August. The board of health has sent out a warning and has asked that all cases of fever that cannot be reasonably explained as due to some other ailment be isolated pending a careful diagnosis.

MINNESOTA

Health Exhibit.—The University of Minnesota School of Medicine, Minneapolis, and the Minnesota State Medical Association are cooperating in a health exhibit which will be held in the public health building at the state fair, August 30-September 6. The exhibit will comprise five sections, tuberculosis, cancer, periodic health examinations, child welfare, and preventive measures against smallpox and diphtheria.

Health Clinics.—The public health association, the agricultural society and the American Red Cross of Rock County, jointly, will erect a building on the county fair grounds which will be used for public health exhibits. It will be completed in time for the fair this fall.——The Winona County Public Health Association will conduct a child welfare clinic at the county fair, the last week in August, and a series of clinics in other parts of the county in the fall.

Expedition to the Hawaiian Islands.—There has been organized at the University of Minnesota an expedition to the Hawaiian Islands to survey the marine fauna and flora along the coast, with special reference to the algae and the food of fish. The occasion of the trip is the first Pan-Pacific Food Conservation Conference, following the termination of which the group will remain for the rest of the summer in the Hawaiian Islands. The work will be a cooperative study of the plants and animals inhabiting the waters there, with reference to their relation to the production of human food. According to *Science*, the members of the expedition include: Henry A. Erikson, Ph.D., chairman, department of physics; James Arthur Harris, Ph.D., professor of botany; Shirley P. Miller, M.A., instructor of anatomy; Royal W. Chapman and William E. Hoffman of the department of zoology; Ross A. Gortner, Ph.D., professor of plant physiology; William A. Riley, Ph.D., chief of the division of entomology; Josephine Tilden, M.S., professor of botany.

MISSISSIPPI

Personal.—Dr. Henry S. Gully, Meridian, has been elected superintendent of the Mattie Hersee Hospital to succeed Dr. Samuel H. Hairston, resigned.

MISSOURI

Physician Exonerated.—Dr. John W. Barson, Joplin, who was arrested, August 7, on the charge of manslaughter for an alleged criminal operation and released under $3,000 bond, was exonerated from all charges at a preliminary hearing, August 17.

Personal.—Dr. John M. Frankenburger, Kansas City, has been appointed superintendent of the Kansas City Hospital to succeed Dr. William L. Gist, resigned.——Dr. Samuel T. Van Dover, St. Louis, has been appointed chief surgeon of the Terminal Railroad Association to succeed the late Dr. William A. McCandless.

Hospital for Pike County.—Physicians of Pike County are planning to have the voters at the November election approve a proposition for the erection of a county hospital for which, it is reported, there is a trust fund for maintenance created by the late Otis Smith, who left $100,000, and the late Miss Barr, who left $40,000, to be used for the purpose of erecting and maintaining a hospital at Louisiana.

Child Welfare Clinic.—The child welfare clinic, conducted by the state board of health at Doniphan, August 6-8, was attended by 121 children, that at Naylor, August 13, by forty children, and the clinic at Oxly, August 14, by thirty children. An examination was made in each case, a diet card and a list of physical defects found given each parent as well as advice on the care of the children's teeth and eyes, and literature on the general care of children's health.

MONTANA

Poliomyelitis at Missoula.—Eight cases of poliomyelitis with five deaths have been reported within a period of three weeks at Missoula, it is reported.

NEW YORK

Personal.—The board of trustees of the State Institute for the Study of Malignant Diseases has appointed Dr. Burton T. Simpson, Buffalo, superintendent to succeed the late Dr. Harvey Gaylord.

Veterans' Hospital Opened.—The U. S. Veterans' Bureau Hospital No. 96, Tupper Lake, New York, was formally opened, August 15, making available 500 additional beds for tuberculosis cases. Dr. Edward P. Odendhal is the medical officer in charge.

Illegal Practitioner.—James Nardi, New York, pretending to be a physician, convinced a whole family, mother, father, son and daughter, that they were ill and treated them for several months, it is reported. He was paid about $900. Nardi is now being held for trial in special sessions in $1,000 bail.

Investigating Committee.—The Jamestown Medical Society appointed a committee, August 19, it is reported, consisting of Drs. Charles E. Goodell, Raymond C. Fess, James F. Valone and Lester D. Bowman, to confer with the board of public welfare regarding an investigation which "the medical men" requested. The board of public welfare is a municipal board and controls the Jamestown General Hospital.

The Poliomyelitis Outbreak.—According to the state department of health, 217 cases of poliomyelitis have been reported from eighty-two foci since June 1, as compared with sixty-seven cases reported from forty-three foci in 1923. Of the cases this year, 50 per cent. are under 5 years of age, 33 per cent. between 5 and 9 years, and 11 per cent. between 10 and 14 years. The preponderance of cases has been reported from urban centers—Syracuse and Oswego—but small communities have reported a number of cases among which are the towns New Haven, Oswego County, and De Witt, Onondago County, and the suburban villages of Eastwood and

East Syracuse. Another center seems to be developing in Dunkirk, Chautauqua County, and two cases have been reported at Riverhead, L. I.——The total number of cases in the epidemic at Syracuse had reached eighty, August 12, and there had been seven deaths.

New York City

Extension Course in Pediatrics.—Columbia University is offering a six weeks' postgraduate course in diseases of children to qualified graduates in medicine. The instruction will be given at Mount Sinai Hospital from October 13 to November 22.

Hospital News.—The National Hospital for Speech Disorders has taken title to the four-story building, 143 East Thirty-Seventh Street, New York.——The contract has been let for a $75,000 addition to the Lenox Hill Hospital, Park Avenue and Seventy-Seventh Street.

Personal.—Dr. Carlisle S. Boyd has been appointed attending physician to the Willard Parker Hospital.——Dr. Charles W. Gould, New York, has been elected president of the National Eugenics Research Association.——Dr. Alexis Carrel, Rockefeller Institute for Medical Research, gave an address before the British Medical Association, at its recent annual session in Bradford, on "The Method of Tissue Culture and Its Bearing on Pathologic Problems."

Hospital Dedication.—The federation for the support of Jewish philanthropic societies announces that the new Hospital for Joint Diseases, Madison Avenue and One Hundred and Twenty-Third Street, will be dedicated, October 5. The hospital, representing an expenditure of $2,000,000, has a bed capacity of 275, and facilities for treating 1,500 patients during the day. According to the announcement, it is the largest hospital in the world devoted exclusively to the treatment of the lame.

Seaside Clinics.—The seaside clinics, which were opened by the commissioner of health with the aid of the mayor's committee of women, at Coney Island, Rockaway Beach and South Beach, Staten Island have proved their value. The clinic at Coney Island has given surgical aid in 1,218 cases and medical aid in 131. The other clinics were well attended. In addition, the committee of women sold 24,452 bottles of milk to the mothers of small children at the low price of 1 cent per bottle of 8 ounces.

OHIO

Chiropractor Fined.—J. J. Bolender, Urbana chiropractor, was recently fined $25 and costs for practicing medicine without a license, it is reported.

Personal.—Dr. Harvey J. Howard, professor of ophthalmology, Union Medical College, Peking, China, gave an illustrated lecture before the Summit County Medical Society, Akron, August 18.

Vaccination in Industry.—Seventy-two industrial plants in the city of Cleveland recently reported to the city health commissioner that 100 per cent. of their employees had been vaccinated against smallpox.

OREGON

No Fake Diplomas Here.—When Harry T. Brundidge of the St. Louis *Star* visited Portland recently, he stated, it is reported, that among the effects of the chief promoter of the diploma mill were 300 applications for permits to practice medicine in the state of Oregon, but not one of them was filled out, and that he has never been able to discover that any fake degrees had been sold in this state.

PENNSYLVANIA

Personal.—Dr. Louis F. Arensburg, Uniontown, was elected commander-in-chief of the Grand Army of the Republic at the fifty-eighth annual encampment, Boston.

Licenses Revoked and Reinstated.—The Board of Medical Education and Licensure, at a meeting, August 13, revoked the license to practice in Pennsylvania of Dr. William F. Ely, Lansford, for violation of the Harrison Narcotic Law.—— At the same meeting of the board the license of Dr. Walter C. Brady, Allentown, which was suspended by the board, Oct. 18, 1923, for violation of the Harrison Narcotic Law, was reinstated.

Hospital News.—The erection of the new Children's Hospital building, for which $1,500,000 is now available, will soon be started.——The state department of welfare has authorized the expenditure of $125,000 for improving the Coaldale Hospital, Coaldale, an addition to which has just been completed. The old building is to be modernized.——Construction will soon start on a $300,000 building for the Polyclinic Hospital, Harrisburg.

Prevention of Pneumonia.—The city of Pittsburgh has recently required all cases of pneumonia to be quarantined. The purpose of this somewhat advanced step, the Pittsburgh authorities announced is (1) to prevent the spread of the disease by direct contact with other persons (2) to educate the public in regard to protection against pneumonia by avoiding contact with cases and by avoiding colds and influenza and (3) to obtain complete statistical data regarding the incidence of pneumonia and afford an opportunity for study of the environmental factors in relation to the cause of pneumonia. An interesting feature of this work is that the public offered practically no opposition to pneumonia quarantine.

Philadelphia

Personal.—Dr. McCluney Radcliffe, who has been associated with the Wills Hospital in various positions for twenty-six years, has resigned as surgeon to that institution and Dr. Thomas A. O'Brien has been elected to succeed him.

Hay-Fever Clinics.—Hay-fever clinics are operating at full capacity in the Jefferson, Germantown and the University hospitals and in the Phipps Institute, Seventh and Lombard streets. The clinic at the Jefferson Hospital is the largest in the city, with about 100 cases under treatment.

Health Playlet for Children.—"Keeping the World Fit," a playlet purporting to impress on youthful minds the correct diet, was presented by the Philadelphia Dairy Council, at the Parkway Playground, Twentieth and Race streets, August 22, before an audience of several hundred children. This is one of the series of "theatrical" arguments being sponsored by the council to educate the youngsters in health rules. In schools and playgrounds of the city, the council gives these health plays, furnishing the coaching, costumes and scenery. The children who take part are those who frequent the playgrounds.

Chiropractor Gets Ten Years.—Paul N. Osder, chiropractor, chiropodist, optometrist, etc., was convicted, August 14, of swindling a former patient out of $8,390 and sentenced to ten years in the county prison, it is reported. While treating this patient, Osder suggested that she allow him to make investments on the stock market for her, and represented himself as owner of a private sanatorium in Atlantic City and other property. The patient borrowed money several times to advance to Osder and finally mortgaged her home. After Osder's conviction in this case, the court was informed that he had been committed to the Rahway reformatory on a charge of embezzlement in 1915.

TENNESSEE

The Knoxville Typhoid Epidemic.—The epidemic of typhoid fever at Knoxville, which had reached a total of 150 cases with seven deaths, August 17, was on that date said to be on the decline.

VIRGINIA

Hospital News.—Plans are being drawn for a $200,000 building for the Danville General Hospital.——A new building will be constructed at the Danville General Hospital, Danville, with the $250,000 bequeathed that institution by the late John E. Hughes. The site has been purchased and plans are being drawn in which it is proposed to include quarters for the city health department.

WASHINGTON

Hospital News.—A new sanatorium for the treatment of tuberculous children, constructed at a cost of $24,000, at Galena, was opened, July 26.——A site has been selected for the Longview Memorial Hospital at Longview. It will be a three-story fireproof building with a capacity of eighty beds and will cost $140,000, exclusive of equipment.

State Society Election.—At the annual meeting of the Washington State Medical Association, at Everett, August 14, the following officers were elected: Dr. Donald A. Nicholson, Seattle, president; Drs. Frederick H. Brush, Yakima, and Andrew A. Matthews, Spokane, vice presidents; Dr. Curtis H. Thomson, Seattle, secretary-treasurer, and Dr. John H. O'Shea, Spokane, assistant secretary-treasurer.

CANADA

Hospital News.—Mr. A. E. Mathews, president of the Mathews Steamship Company, has promised that he will donate to the Collingwood General and Marine Hospital the sum of $1,000 from the returns of the first cargo of his new steamer *Royalton*, launched recently.

Gift to Medical School.—Dr. Friend R. Eccles has bequeathed to the Western University Faculty of Medicine, London, Ont., the sum of $110,000 as an endowment. Dr. Eccles further stipulated in his will that, after the lifetime of two relatives, an additional $200,000 will become available for the university.

Public Health News.—An outbreak of poliomyelitis has been reported from Kitchener, Ont., three cases at present being under treatment.——A serious outbreak of typhoid fever has been reported from Port Colborne, Ont., there being already about eighty cases. The assistance of the Provincial Department of Health has been requested.

Organization of Profession in Northern Ontario.—The physicians of the Abitibi region recently gathered at Amos and founded the Abitibi Medical Association. Dr. Bigué of Amos was elected president, and Drs. Joseph Dion and T. Saint-Martin treasurer and secretary. The *Union médicale* of Canada is to be the official organ of the new society.

Medical Treatment for Fishermen.—The Canadian Department of Marine and Fisheries has provided for medical aid and hospital treatment for fishermen on the Grand Banks, and generally for sailors on Canadian and Newfoundland vessels that may be in neighboring waters. The steamship *Arras* has been fitted up as a hospital ship and is now on duty on the Grand Banks.

University News.—The new pathology building, McGill University Faculty of Medicine, Montreal, Que., will be officially opened, Founder's Day, October 6, in the presence of leading pathologists of Great Britain, Canada and the United States.——Psychology has been made a department separate from philosophy at McGill University, and Dr. William D. Tait, Ph.D., has been promoted from associate professor to be chairman of the department and director of the psychologic laboratory. James W. Bridges, associate professor of psychology at the University of Toronto, has accepted a call to a similar position at McGill University.

Society News.—At the annual meeting of the Canadian Medical Association in Ottawa, June 17, Regina was chosen for the next annual meeting.——The following officers were elected at the annual meeting of the Ontario Medical Association in Ottawa, June 17-20: president, Dr. George S. Young, Toronto; vice presidents, Drs. John A. MacGregor, London, and Edgar Brandon, North Bay; treasurer, Dr. George Stewart Cameron, Peterborough, and general secretary, Dr. Thomas C. Routley, 184 College Street, Toronto.——At the meeting of the Alberta Medical Association in Edmonton, July 2-4, Dr. William Hackney, Calgary, was elected president; Drs. Irving R. Bell, Edmonton, and William H. MacDonald, Medicine Hat, vice presidents; Willis Merritt, Calgary, secretary, and John E. Palmer, Calgary, treasurer.——Dr. Daniel MacDonald, North Sidney, Nova Scotia, has been elected president of the Association of Medical Health Officers, and Dr. Arthur C. Jost, Halifax, has been reelected secretary.——Dr. John J. R. Macleod, of the University of Toronto, recently addressed the physiology section of the British Association for the Advancement of Science at Toronto on the newer phases of insulin, based on work done under his direction.

Personal.—Dr. David Fraser Harris, professor of physiology at Dalhousie University Faculty of Medicine, Halifax, Nova Scotia, has resigned.——Dr. Antoine H. Desloges, director of public health of the province of Quebec, will represent Canada on the League of Nations Health Committee.——Dr. Odilon LeClerc attended the third annual congress of the International Association Against Tuberculosis, held at Lausanne, and on his return will make a tour of inspection of the antituberculosis dispensaries in Quebec and make recommendations for improvements in their management. The opening of a new series of dispensaries will then be announced.——Dr. William T. B. Mitchell, Ottawa, Ont., has recently been appointed lecturer on psychiatry at McGill University, Montreal, Que. Dr. Mitchell was formerly chief psychiatrist in the department of soldiers' civil reestablishment, Ottawa, Ont., and clinical director at Westminster Hospital, London, England.——The *Bulletin médical* of Quebec gives the details of the celebration of the fiftieth professional anniversary of Dr. Edwin Turcot, of the chair of internal medicine at Laval University Faculty of Medicine, Quebec. More than fifty physicians gathered at the fête champêtre in his honor at the villa of Dr. Marois.

GENERAL

American Legion Convention.—American medical officers who served with the British in the World War and who attend the American Legion convention at St. Paul will have their headquarters with Dr. William A. R. Chapin of the Massachusetts delegation.

Directory of State and Insular Health Officers.—The U. S. Public Health Reports, August 22, contains a tabulation of state and insular health departments of the United States, the names of officers of the state boards of health and of the various departments and bureaus, and data concerning appropriations for these departments, and the names of their publications.

Carnegie Institute of Pittsburgh.—The Carnegie Corporation, New York, has paid to Samuel H. Church, president of the Carnegie Institute of Pittsburgh, $8,000,000, which was provisionally promised four years ago. This makes a total amount of $38,000,000 given to the institute by the Carnegie Corporation. It is to be added to the endowment for the educational work of the institute.

Provisional Birth Rates.—The Department of Commerce announces that provisional birth rates for the first three months of 1924 show lower birth rates than for the corresponding three months of 1923. For the states compared, the birth rate for the first quarter of 1924 was 21.3 as compared with 22.7 for the same period in 1923. The highest rate for the quarter is 28.9 for North Carolina and the lowest, 13.8, for Montana.

Provisional Mortality Figures 1924.—The Department of Commerce announces that provisional figures for the first three months of 1924 show lower death rates than for the corresponding periods of 1923. For the states compared, the death rate for the three months was 12.6 in 1924 against 15 for the first three months of 1923. If the ratio of the crude rates to the adjusted rates for 1920 be applied to the 1924 quarterly rates, the highest rate for the first quarter of 1924 is that for Florida, 16.6, and the lowest that for Montana, 8.3.

American Academy of Ophthalmology and Oto-Laryngology.—Sir Arthur W. Currie, LL.D., vice chancellor, McGill University, will deliver the address of welcome at the twenty-ninth annual meeting of this academy at Montreal, September 16-20, the entire ninth floor of the Mount Royal Hotel being reserved for the sessions (THE JOURNAL, May 3, p. 1452). There will be an exhibition of old and rare books on the eye through the courtesy of Dr. William Gordon M. Byers, Montreal. There is a list of 120 candidates for fellowship to be presented at the meeting.

Standard Weight of Ice Cream.—A few states have adopted laws dealing with the sale of ice cream by weight. Wisconsin requires that the volume of ice cream when melted shall be not less than one half the volume in its frozen state, as it is manufactured and sold. Kansas has a law which requires a standard density of ice cream. Experiments to determine a proper standard have been conducted in Washington, and the Department of Agriculture proposes a tentative standard weight of 4¾ pounds per gallon, subject to discussion and possible change before it is incorporated in the state laws.

Change in Cost of Living.—According to a survey by the National Industrial Conference Board, between March 15 and July 15, 1924, there was an average decrease of nine-tenths of 1 per cent. in the cost of living. This change was due to decreases in the average cost of food, clothing, fuel and sundries. The only increase was in the average cost of shelter. Between July, 1920, when the peak of the rise in the cost of living since 1914 was reached and July, 1924, there was a decrease of 20.9 per cent. The increase in the cost of living since July, 1914, was 61.7 per cent. The purchasing value of the dollar based on the cost of living, July, 1924, as compared with the dollar in July, 1914, was 61.8 cents.

Pacific Northwest Medical Association.—The third annual meeting of this association at Vancouver, June 26-28, was the first international medical convention ever held in British Columbia, and the total registration, 589, was larger than at any other meeting. The sessions were held in the ballroom of the Hotel Vancouver, where a large number of the delegates stopped. There was but one official social function, at

which the retiring president, Dr. Homer D. Dudley, Seattle, gave the presidential address and Dr. Thomas C. Routley, Toronto, presided. In accordance with the by-laws of the association, the speakers at the sessions were from outside the territory of the association, and they included noted authorities from Great Britain, Canada and the United States.

Psychologic Research at Yale University.—A generous contribution for five years by the Laura Spelman Rockefeller Memorial provides for psychologic research at Yale University. A group of research specialists will be associated together in an institute for the study of fundamental problems of behavior, and for the training of personnel for the pursuit of new studies. Roswell Parker Angier, Ph.D., professor of psychology at Yale, will be chairman of the institute, which will be an integral part of the university and closely associated with the graduate school. Arrangements have been completed for bringing to the institute three prominent scientists, Robert M. Yerkes, Ph.D., formerly of the National Research Council; Raymond Dodge, Ph.D., formerly professor of psychology at Wesleyan University, and Clark Wissler, Ph.D., of the American Museum of Natural History.

Homeless Children.—A recent report of the Children's Bureau, U. S. Department of Labor, on "Foster Home Care for Dependent Children," states that one third of the homeless children in the United States under the care of charitable agencies have found foster parents who have taken them into their homes. The emphasis in the last decade on the need of home care for the child has resulted in an effort to prevent the break-up of the child's own home by giving mothers' pensions or public aid to children in their own homes, and, secondly, to find a substitute home for the homeless child. The results of this effort are evident; forty-two states give public aid to dependent children in their own homes, and the number of children in foster homes has increased while the number of children in institutions has, in proportion to the child population, decreased. According to the report, the number of children aided in their own homes is placed at 127,000, the number in foster homes at 70,000, and the number in institutions at 125,000. The report states also that foster home care for children is not a new experiment. This method under various names has been used for centuries.

Third Pan-American Scientific Congress.—The members of the Third Pan-American Scientific Congress, which meets at Lima, Peru (THE JOURNAL, June 21, p. 2059), will comprise official delegates from countries represented, representatives of universities, scientific institutes and societies of American countries, citizens of the countries attending the congress and foreigners residing therein, invited by the organization committee, and authors of papers submitted to the congress. Papers for the congress will be received up to October 1. Authors unable to send their papers in due time must forward the titles thereof to the secretary-general, together with a summary not exceeding 1,500 words, within the period specified. Within three days before the official inauguration, preparatory sessions will be held to elect the honorary president and vice presidents, and the board, and to designate honorary members. When the congress commences work, the president, the secretary-general, and the presidents of the official delegations of the attending states, will form the executive committee, which shall propose the conclusions to be voted by the congress and the city wherein the next congress will meet. The official languages of the congress will be Spanish, Portuguese, French and English.

Instruction in Sanitary Engineering.—The following colleges offer full courses in sanitary engineering, according to Mendelsohn, *Public Health Reports*, August 15: Columbia University, Harvard University, Massachusetts Institute of Technology, Pennsylvania State College, State University of Iowa, University of California, University of Illinois, University of Michigan, University of Texas and Villanova College. Four other colleges offer optional courses in sanitary engineering: Iowa State College, University of Kansas, University of North Carolina and West Virginia University; and, among the other engineering colleges in the country, at least fifty-five give courses in water supply and water works, sewerage and sewage disposal. The number of graduates from sanitary engineering courses in engineering colleges, the author states, increased steadily until the World War caused a sharp and sudden drop. This year the number will be at least thirty-seven graduates, as compared with sixty-nine in 1917. The sanitary engineering course differs from the civil engineering course as now given mainly in that about 6 per cent. more time is allotted to sanitary engineering subjects and 4 per cent. more time to chemistry and biology instead of allied engineering subjects. The courses are generally four years in length, although five years in one college and in another six.

Society News.—The thirty-fourth annual meeting of the American Electrotherapeutic Association will be held at the Hotel Pennsylvania, New York, September 9-12. Dr. Sinclair Tousey, New York, the president, will deliver an address on "The Principles of Radium Therapy." Physiotherapy clinics will be held at the U. S. Veterans' Bureau, Grand Central Palace, Lexington Avenue and Forty-Sixth Street; the Reconstruction Hospital, One Hundredth Street and Central Park West, and the Beekman Street Hospital, 117 Beekman Street. All legally licensed physicians are cordially invited.——The thirty-second annual meeting of the Association of Military Surgeons of the United States will be held at San Antonio, Texas, November 13-15. The Air Service Medical Association has accepted the invitation to hold a joint meeting. The railroads have agreed to grant a round trip rate not greater than a fare and a half, and probably a lower rate will be granted. The chief of staff of the army has authorized the use of troops on duty in San Antonio and the second medical regiment will give a demonstration similar to that of last year at Carlisle Barracks. There will also be an aerial demonstration which will include, among other things, the aeroplane ambulance and the physical examination for flyers. Through the courtesy of the state department, invitations have been extended to officers of the military service of thirty-three foreign governments.

Suit Brought to Abolish Limit on Liquor Prescriptions.—A suit has been brought in the supreme court of the District of Columbia to abolish the restrictions on the number of liquor prescriptions which a physician may issue to his patients, under the Volstead Law. The action is initiated by Dr. William E. Philes, Washington, D. C., and asks for an injunction to prevent Roy A. Haynes, prohibition commissioner, and H. M. Luckett, district prohibition agent, from limiting the number of prescriptions which Dr. Philes may issue. The complainant alleges that the Volstead Law does "not purport to regulate the use of lawfully possessed spirituous liquors for medicinal purposes otherwise than under the physicians' prescriptions, nor to regulate the giving of advice in regard to such use." The complainant challenges the right of the prohibition commissioner to restrict the number of patients a physician may treat and questions the authority which limits liquor prescriptions to 100 pint prescriptions to each physician each ninety days.

By refusing to issue prescriptions in excess of that number, Dr. Philes, through his attorneys, T. Morris Wampler and Purcell and Densmore, contends that the defendants are "depriving him of his property without due process of law; depriving him of his right to practice his profession and thus deprive him of the means of earning a livelihood." The complaint further states that: "Based upon his experience, observation and study of medical science, the complainant believes that the use as medicine of spirituous liquors to be taken internally is, in certain cases, necessary for the proper treatment of patients."

The physician then states that he has more than ninety cases each three months which, in his opinion, require liquor in their treatment. To deprive him of the right to prescribe this treatment is an unwarranted interference and "deprives him of his right to practice medicine although duly licensed and admitted to practice in the District of Columbia." Dr. Philes alleges that he has never prescribed liquor as a beverage, but, adds: "conceding it to be his duty, intends unless restrained by lawful means to issue prescriptions in such cases, according to his best skill and judgment."

LATIN AMERICA

Standardization of Biologic Tests.—The public health authorities in Argentina have appointed a committee to study ways and means for standardization of the Wassermann and other biologic tests in laboratories throughout the country.

Brazilian Congress on Hygiene.—Dr. Mario Pinotti, Caixa Postal 2654, Rio de Janeiro, is in charge of all correspondence for the approaching second Brazilian Congresso de Hygiene to meet at Bello Horizonte. Among the fifteen officially designated topics to be discussed are "Cancer in Brazil," "Standardization of Statistics," "Occupational Hygiene," and "Mental Hygiene."

Fifth Biology Reunion in Mexico.—This meeting convened at the medical school in the City of Mexico, July 21, and continued for several days. Dr. Fernando Ocaranza, presi-

dent of the Sociedad Mexicana de Biología, opened the proceedings and spoke later on "Poisoning from Scorpion Stings" and "Mexican Publications on Physiology." Prof. I. Ochoterena discussed neurologic questions, especially "The Dual Innervation of Striped Muscles," and Dr. I. González Guzmán the "Technic of Postvitam Staining" and the "Differential Blood Count." Among the other speakers, Dr. T. G. Perrin described cancer of endocrine organs and Drs. Cervantes and Varela their experiences with testis implants.

Personal.—On concluding his series of lectures on the heart, at the invitation of the Buenos Aires medical faculty, Prof. H. Vaquez, Paris, was tendered a banquet by the dean of the medical school, Prof. J. Iribarne. The dean of the medical faculty of Montevideo, Dr. M. Quintela, and of the La Plata medical faculty, Professor Dasso, were also guests of honor.——Dr. J. M. Obarrio has resigned the charge of the Instituto Frenopático at Buenos Aires.——Prof. José Arce, rector of the University of Buenos Aires, presided at the banquet tendered recently to Prof. Nerio Rojas on his appointment to the chair of legal medicine.——Dr. Kohly-Ruiz, manager of the *Revista Médica Cubana*, has returned to Havana after a year spent in visiting dermatologic clinics in other countries under commission from the public health service of which he is an official.

FOREIGN

International Esperanto Congress.—The *Wiener klinische Wochenschrift* states that forty physicians from nine different countries registered for the Sixteenth Esperanto World Congress which opened at Vienna, August 8. Four addresses were announced in the medical section.

Status of Plague in Egypt.—From January 1 to June 17, 1924, a total of 209 cases of plague was reported in Egypt, and fourteen cases during the week ended June 17 in seven districts in Egypt. The total number of cases reported last year from January 1 to June 17 was 1,036.

Lister Medal.—The Royal College of Surgeons of England has awarded its Lister medal for distinguished contributions to surgery to Sir William Watson Cheyne, who, in accordance with the conditions of the trust, has undertaken to give an address at the Royal College of Surgeons next year.

Sterilization of the Unfit.—The ministers of justice and of foreign affairs of Saxony have recommended to the German national department of justice that physicians operating for sterilization of the unfit should be exempted from the laws penalizing infliction of personal injury on a second party. The complete text of the proposed bill is given in the *Deutsche medizinische Wochenschrift*, July 25.

Prize for Research on Altitude.—The mountain resort Semmering offers a prize of 1,000 crowns for the best published or unpublished work of the last two years on the physiology and pathology of altitude. A committee of five has been appointed in the Vienna Academy of Sciences to award the prize. Only Austrians can compete, unless the research work is done at an Austrian institute or mountain resort.

British Medical Association's Prize Winners.—At the annual general meeting of the British Medical Association, at Bradford, Dr. Edward Mellanby, professor of pharmacology at the University of Sheffield, was awarded the Stewart prize, consisting of an illuminated certificate and a check for £30, for discoveries on the relation between rickets and the deficient diets. Dr. Henry Britten Brackenbury was presented the association's gold medal and illuminated address for distinguished services to the association and the medical profession.

Children in Motion Picture Halls.—The Académie de médecine at Paris recently adopted a resolution protesting against allowing children under 5 years of age to be taken into theaters and motion picture halls, as the large number of people and the defective ventilation can be only harmful for very young children. The vote was taken to endorse a similar resolution by the Bouches-du-Rhône Medical Society. The latter society urged further that children under 12 should be excluded from certain representations, but the Académie rejected this as too vague.

St. Thomas Hospital.—Fifty beds at the St. Thomas Hospital, London, have been closed for lack of means. Prior to the war, St. Thomas Hospital was able to pay its way, but the five years in which it not only carried on its own program with 484 beds, but in addition provided 530 beds for the treatment of soldiers, ended in its being saddled with its present debt of £120,000. The war office contributed toward the cost of its public military service, but there was an unavoidable excess of expenditure over income, and it has not been possible to bring the hospital back to its prewar condition.

Imperial Cancer Research Fund.—The annual meeting of the Imperial Cancer Research Fund was held, July 23, at the Examination Hall, Queen's Square, London, the Duke of Bedford presiding. During the last year the activities of the fund increased, and still greater activity is practically assured in view of the approaching completion of the Stroud Laboratory, which has been provided free of cost to the fund by the executors of the late Augustus C. Stroud. There was a substantial increase during the year in subscriptions and donations, including a grant of £500 from the Worshipful Company of Goldsmiths.

Metric System in Japan.—A recent imperial ordinance announced that on July 1 the metric system became the official standard of measurement in Japan. The law does not contemplate the immediate universal use of metric units, although the government for some time has been conducting an education campaign to popularize the system, and has made demonstrations in various cities. As an example of the financial difficulties to overcome, in addition to very formidable physical difficulties, it is said that the replacement of the scales used at present by the imperial government railways will mean the purchase of several thousand new scales at an expenditure of perhaps a million yen.

The Ponndorf Method on Trial.—The public health authorities in the Netherlands have appointed a committee of physicians, including Drs. Aldershoff, H. Brouwer and G. Scheltema, in addition to public health officials, to investigate Ponndorf's scarification method of tuberculin treatment. The committee decided that a deputation of three of its members should be sent to Weimar to study Ponndorf's technic and investigate the outcome where it has been applied in various hospitals in Germany. Ponndorf regards the skin as a potent element in the production of antibodies, and seeks to utilize this to the utmost.

Royal Sanitary Institute.—At the thirty-fifth annual congress of the Royal Sanitary Institute, Liverpool, which opened, July 14, Professor Kenwood gave a popular lecture on modern civilization from the health point of view, in which he insisted on the important rule, "to live as healthily as possible, we must live as naturally as possible." He said that civilized communities were tending toward an artificiality of living which threatened health in many ways; that man had an abundance of food, the bulk of which was not fresh and was impregnated with chemical preservatives; that bread could scarcely now be called the staff of life as the most valuable parts of the flour do not enter into it. The visit of the king and queen took place, July 19, in connection with the consecration of the completed portion of the cathedral.

Chair of Surgery at Edinburgh.—The chair of surgery at the University of Edinburgh, vacant through the death of Prof. Alexis Thomson, has been reorganized on a whole-time basis, with permission granted to the professor to do private practice two afternoons a week in the city of Edinburgh. Mr. John Fraser, to whom the chair was first offered, declined it on account of the conditions attached, and the curators have now appointed Mr. David P. D. Wilkie for a period of ten years from October 1. Dr. Wilkie, who is 41 years of age, has made numerous contributions to surgical literature, and in 1918 received the Victoria Jubilee Liston prize, awarded every three years at the Royal College of Surgeons of Edinburgh for original research. He has been joint lecturer in surgery for several years in the extramural school at Edinburgh.

Personal.—Dr. Waclow E. Majewski, public health officer, district of Cheln, Poland; Dr. Germund Wigin, University of Upsala, Sweden, and Dr. Nils Heitman, Christiania, Norway, are in this country studying health demonstration and public health methods.——A party of Spanish physicians has been making a clinic tour of England, and Drs. Rosell and San Ricart y Pia Armengol of Barcelona spoke at the annual meeting of the British Medical Association, which the party attended.——The Italian Society of Dermatology and Syphilography has elected to honorary membership Dr. B. Barker Beeson of Chicago and Profs. R. Riecke, Göttingen, E. Hoffmann, Bonn, and F. Juliusberg, Brunswick.——The Vienna Dermatologic Society has recently elected ten foreign honorary members, including Profs. J. A. Fordyce, New York; Fibiger and Rasch, Copenhagen; Herxheimer, Frankfort, and J. Almqvist, Stockholm.

Medical Congresses at Milan in October.—Five medical meetings are planned to dovetail into each other at Milan the last week in October. The annual meeting of the Italian Pediatrics Society convenes October 22, with three topics selected for discussion, including "The Diathesis and Constitution in Children." The orthopedics congress follows, with only one topic inscribed on the bulletin, "Scoliosis." The congress on surgery follows, with the topics of "Sympathectomy" and "Indications for Splenectomy." The urology congress, which opens October 29, will discuss "Diverticula of the Bladder," and "Electrocoagulation of Bladder Tumors." The congress on internal medicine closes the list, October 28-31. Pende and Piazza will introduce the discussion on "Suprarenal Syndromes"; L. Ferranini, "Diagnosis of Nephritis," and, in a joint meeting with the Società di chirurgia, Micheli and Cappelli will discuss "Indications for Operation in Various Forms of Splenomegaly."

Deaths in Other Countries

Dr. **K. G. F. Lennmalm,** rector of the Karolinska Medico-Surgical Institute at Stockholm, professor of neurology, member of the committee for the awarding of the Nobel prize in medicine, and honorary member of the Swedish Medical Association and other societies elsewhere.——Dr. **A. M. Luzzatto,** professor of pathology and clinical medicine at the University of Ferrara, author of numerous articles, including his monograph on cystic kidneys, aged 50.——Dr. **G. Richelot,** professor emeritus of surgery at the University of Paris, president of the Académie de médecine in 1921, a prolific writer on surgery and gynecology, and also in general literature under the pseudonym of Syma, aged 80.——Dr. **Maximo Crescentino,** dean of the medical profession at Caracas, one of the founders of the Caracas Medical Society.

CORRECTION

Appointments at Vanderbilt.—Under this head, THE JOURNAL, August 16, p. 540, stated that Dr. James M. Mill had been appointed professor of bacteriology. The name should have been Dr. James M. Neill, and the appointment, associate professor of bacteriology.

Government Services

Hospitals Authorized

Pursuant to instructions of the Secretary of War, June 27, 1922, the organization of general hospitals, organized reserves, No. 88 (The Columbia Hospital of Richland County, Columbia, S. C.), No. 138 (Stanford University Medical School, San Francisco, Calif.), No. 140 (Los Angeles General Hospital Unit, Los Angeles), No. 34 (The Elizabeth General Hospital and Dispensary, Elizabeth, N. J.); surgical hospitals, No. 3 (Atlantic City Hospital Unit, Atlantic City, N. J.), No. 67 (Los Angeles General Hospital Unit, Los Angeles); evacuation hospitals, No. 81 (Los Angeles Hospital Unit, Los Angeles), and No. 6 (Rhode Island Hospital Unit, Providence, R. I.), have been authorized.

Promotions and Appointments in U. S. Public Health Service

The following physicians have been promoted to the grade of surgeon, U. S. Public Health Service: Clifford R. Eskey, Walter T. Harrison, Charles Armstrong, Rolla E. Dyer and Justin K. Fuller. The following have been appointed and commissioned in the grade of assistant surgeon: Ernest E. Huber, Howard M. Walker and Henry F. Lucking.

The Defense Test

The National Committee for Co-Operation of Veteran and Patriotic Societies to Support the U. S. Government's Plans for the Defense Test, September 12, defines the Defense Test as follows: (1) A physical demonstration of the new army of the United States as it exists at the present time. (2) A test of the plans already made by the War Department for expanding to full strength our skeleton army created by the National Defense Act, which was passed by Congress in 1920. (The Regular Army, National Guard, and Organized Reserve are all skeleton organizations in peace time.) (3) An opportunity for well informed speakers to explain to the public what the National Defense policy of the United States is—in other words, to tell how Congress planned to provide for our country's protection when they passed the National Defense Act; and further, to tell the people of each community what they will be called on to contribute as a community in men, services, and material to do their part in defending their country in so far as this can be foreseen at this time. (4) An opportunity for patriotic citizens and patriotic societies to show their support of the plans of the United States government, to protect and defend the people of the United States whenever the need for such protection and defense arises. These plans now being put to the first test were prepared by the War Department in carrying out the instructions given by Congress in the National Defense Act.

Army Appointments and Resignations

Drs. Hubert M. Nicholson, Edward J. Kallus, Arthur D. Hawkins, Howland A. Gibson, formerly first lieutenants, M. O. R. C., on duty at Carlisle Barracks, have been commissioned first lieutenants in the regular army medical corps. Capt. Harry G. Johnson, M. C., resigned, effective, July 29.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Aug. 1, 1924.

The Practitioner in Relation to Public Health

A new journal, the *Mouvement sanitaire*, referred to Dr. E. Roux, director of the Pasteur Institute, the question as to what constitutes the function of a medical hygienist. Dr. Roux discusses the reasons why in France it is difficult to secure the introduction and enforcement of hygienic measures. The principal reason lies in the individualism of the French, who are loath to yield to hygienic discipline for the sake of the common welfare (THE JOURNAL, Feb. 26, 1921, p. 601). It would seem as if the real teachers of public health principles would be the physicians. They have entrance to the family fireside and are acquainted with the individual members of the family. They see what conditions prevail in the homes, and they are in a better position than any one else to give advice with respect to hygienic management. Their duty does not stop with the care of patients, but should be conceived as including the preservation of the entourage. It would seem that, through the physicians, a knowledge of hygiene ought to be rapidly disseminated among the people. Why, then, is hygiene in France, in spite of the widespread influence of the physicians, so backward? It is because the present conditions of society compel physicians to practice their profession in such a manner that it is not easy for them to fulfil the rôle of hygienist which seems naturally to fall to their lot. In the large cities, the leading authorities in medicine are consultants who are not called to the homes except in grave cases. The local practitioners are obliged to make many calls every day, to climb many stairs, and after having examined the patient and prescribed the treatment, they are compelled to reduce to a minimum the advice needed with respect to prophylaxis. They have not time to explain how soiled linen should be treated before it is turned over to the laundress, or how a sputum cup should be disinfected. And when they do take time to give some hasty instructions, the chances are that they will not be understood. As for the rural practitioner, he has even less time than the city physician to give his clients instructions with regard to the prophylaxis of disease and the application of the principles of hygiene. Thus, physicians do not play in the dissemination of a knowledge of public health just the

rôle that they might be expected to take on themselves. To these reasons Dr. Roux had the courage to add another, which he developed without circumlocution: "The young physician, just after his graduation, is not prepared to function as a hygienist. Indeed, up to the present time, instruction in hygiene in the schools of medicine has been chiefly verbal." Rapid field trips to a dispensary, a sanatorium, a disinfection plant; to the intakes of the water supply; to the sewers; to the sewaged fields, and to the filtration plant, make up the usual round of practical training that the candidate for graduation receives, and even that is not possible unless the city in which he is pursuing his studies possesses the hygienic utilities just cited. Again, the hygiene of each aggregation is all too often treated as a distinct unit, as if the health of the garrison, the school and the factory bore no relation to the health of the city, or as if the health of the city did not react on the school and the garrison. Unity of control, which is just as necessary in combating disease as it is in resisting a public enemy, is still an unknown quantity in our public health services, and that is another reason why they secure only mediocre results. Uniform control and management should be the aim in our hygienic services. It is, to be sure, only natural that the minister of public instruction should feel his individual responsibility with reference to the health of the pupils of the land, but Roux only wishes that he might be persuaded to act in accord with his colleague of the public health service. The medical health officer, the agent of the minister of public health, should, in every circumscribed unit, coordinate the efforts of all those who are engaged in the promotion of the public health. Sanitary legislation in France can hardly be said to be fully rounded out as yet. However, inadequate though it may appear, it is probably equal to that of most foreign countries. If it has not produced the results expected by its promoters, the fault lies less in the law than in the manner in which it has been applied. Our hygienic services are too bureaucratic. The worst enemy with which public health administration has to contend is, according to Roux, the bureaucratic hygienist who, without ever paying a visit to the region he serves, endeavors to provide for everything and to regulate everything through instruction sheets and circulars of information. Public health cannot be regulated from a distance; direct contact with the people living in the region to be elevated is a necessity.

The Monument to Pasteur to Be Erected in Chicago

A correspondent of the *Temps* announces that a committee has been formed at Chicago, with Dr. Frank Billings as chairman, charged with the collection of funds for the erection of a monument to Pasteur. The monument will be executed by a French sculptor, M. Léon Hermant, who has long been established in the United States. It will be constructed of stone or bronze at a cost of $30,000. The *Temps* makes an appeal to French physicians for contributions for the erection of this monument.

Responsibility of Surgeons

The courts do not ordinarily claim the right to inquire into questions of a scientific nature, but, in spite of this general principle, they do, at times, examine into a charge of a tort brought against a physician or a surgeon, and, in case the charge is found to be well grounded, they award the plaintiff damages as compensation for the injuries suffered. A demobilized soldier had been wounded, during the war, by shell fragments, which had caused the fracture of the right femur in the middle third. He was obliged to submit to an operation on the leg by reason of an osseous metatarsophalangeal ankylosis of the great toe, which prevented him from setting his foot down flat. A double operation was performed: (1) astragalectomy with removal by the chisel of the astragalus, which was completely consolidated with the neighboring bones, and (2) cuneiform resection of the metatarsophalangeal articulation of the great toe. During the operation, bleeding was abundant, so that the surgeon was obliged to leave a tampon in the wound, and the wound was closed and wicks inserted. Five days later, the surgeon took off the dressing, in order to remove the threads and apply a plaster cast. The wound had closed, and the surgeon thought the wicks had been removed by the intern. Some time afterward, a fistula developed in the instep. The patient was taken to a hospital, where, after surgical intervention, two gauze tampons were recovered through the incision. It was evident that the infection was due to the presence of these foreign bodies. When the patient had recovered, he brought suit against the surgeon for damages. The experts who were summoned for the trial were asked to decide whether the surgeon had operated in accordance with the rules of the art or whether he was guilty of a professional tort. They declared that the mere fact of his having left tampons in the wound did not constitute a professional tort. But the tribunal did not abide by their decision. In his decree, the judge began, it is true, by saying that scientific questions subject to debate among physicians cannot be considered the basis for claims for damages and lie without the domain and the investigation of the courts. But, the judge explained, this rule did not apply when the fact charged is the result of a characteristic oversight, imprudence, grave neglect, or ignorance of matters that a man trained in the surgical art must necessarily know. The court added: "It would be unjust and dangerous for society in general to proclaim as an absolute principle that in no case are physicians and surgeons responsible for the manner in which they practice their art." As a consequence, the surgeon was compelled to pay his patient the sum of 10,000 francs, by way of damages.

Thus, in spite of the opinion of the experts that there was no evidence of a professional tort in this case, the court held that the operation had been performed under conditions that permitted it to judge whether there was a tort or not, aside from any technical question to be entered into.

The Right of Response

According to French law pertaining to the press, the manager of any publication appearing periodically is obliged to insert in its columns the response of any person named or designated in that publication. This "right of response" has often given rise to unjustified pretentions and to actual abuse. In a recent case in which the *Revue des deux mondes* figured, the court of appeals of Paris saw fit to limit the application of this law. The response, being an act of defense, presupposes necessarily an attack. Criticism of a literary work cannot be regarded as an attack, and a review may refuse to insert the response to a criticism. But the case was carried to the supreme court, which has just declared that the right of response is absolute and that it can be exercised even though the response was elicited, irrespective of any personal attack, by criticism of a literary work. What the supreme court has proclaimed with reference to a literary work will doubtless apply with equal force to a scientific work. When a person is named or designated in a review article, he has the right to reply, even though the criticism was moderate and made with all impartiality.

A Sanatorium for Students

The National Federation of Students' Associations of France is planning to establish a sanatorium for students, to be erected at Saint-Hilaire-du-Touvet, near Grenoble, in the plateau region of Petites-Roches, which has an elevation of 1,100 meters. The sanatorium of the students will be located, therefore, not far from the Interdepartmental Sanatorium

(450 beds), in southeastern France, and the sanatorium of the Association of Metallurgists and Miners (300 beds). The administration and management of the new sanatorium will be entrusted to a body that will control the affairs of all three sanatoriums. However, in case of necessity, the sanatorium of the students may be administered and managed temporarily by a committee composed of members of the federation. The sanatorium will provide for tuberculous students the care that they need in order that they may later continue their studies.

Insulin and Coagulation of the Blood

In the current number of the *Journal de médecine de Bordeaux*, Dr. J. La Barre has an interesting article on the subject of insulin in relation to the coagulation of the blood. He has been studying on animals the effect on blood coagulation of purified insulin prepared in accordance with the technic of Banting and his collaborators, as compared with the action of unpurified insulin, which contains cholin, cholesterin, etc. It appears from his researches that impure insulin, when administered in comparatively small doses, may delay markedly the succession of phenomena that regulate the coagulation of the blood. Vernieuwe of Ghent reported recently a case in which a diabetic patient, treated with impure insulin and operated on for parotitis, presented, during the course of the operation, an abundant hemorrhage of the neck. La Barre emphasizes therefore the necessity of using only pure brands of insulin for diabetic patients who are to undergo a surgical operation.

HOLLAND

(From Our Regular Correspondent)

Aug. 6, 1924.

The Seventy-Fifth Anniversary of the Nederlands Medical Association

The Nederlandsch Maatschappij tot Bevordering der Geneeskunst convened recently in a special assembly in celebration of the seventy-fifth anniversary of its foundation. In the presidential address, which was full of wit and good feeling, Dr. Burger gave reminiscences of the epoch in which the society was founded, and drew comparisons between the medical life of 1830 and that of today.

Dr. Daels of the University of Ghent brought greetings from the Flemish physicians of Belgium. The question was raised whether the society should supply the young physician at graduation with information concerning favorable fields in which to practice. Up to the present, no effort has been made to establish a clearing-house of information in regard to vacant posts for physicians throughout the country. Amsterdam has a plethora of physicians—more than one sixth of the total number in the country. Many of the speakers expressed the view that it was the duty of the society to secure and to transmit to young physicians who have been newly graduated all the necessary information with reference to possible professional openings in various regions. The proposal, however, did not meet with the approval of all the members, for many practitioners felt that it was better to leave every physician full liberty to work out his own salvation. The assembly decided to collect exact statistics pertaining to the matter, and, as the first move in this direction, to order the preparation of a comparative table showing the percentage of physicians to the total population in the various sections of the country.

The most important scientific address was that of Professor Wenckebach of Vienna, who outlined the development of our knowledge of the diseases of the heart and the blood vessels.

Ocular Lesions and Traumatic Cataract

In connection with his study of a case of traumatic cataract, the etiology of which seemed obscure, Dr. Bracy, medical controller of the Rijksverzekeringsbank of Amsterdam, instituted an exhaustive inquiry on the various ocular traumatisms that the person had undergone. This inquiry included a series of accidents observed during a period of five years from 1914 to 1918. The number of ocular accidents amounted to 14.2 per cent. of the total number of accidents; or, to be exact, 55,326 out of 389,795. Of the ocular accidents, 73.2 per cent. are recorded as due to foreign bodies of the conjunctiva or the cornea, without grave symptoms, and yet 2,041 of these accidents resulted in a considerable degree of disability. From the statistics of a life insurance company, the author was able to discover 190 cases of opacity of the crystalline lens, which brings up to 0.34 per cent. the number of cataracts that are associated with ocular injuries in general.

In studying the etiology of these 190 cases, the author found evidence of direct causation through corneal or crystalline traumatism in 185 cases. In five cases, he could discover only a contusion of the eyeball, in which one could eliminate any direct lesion of the organs considered. In these cases, the diminution of visual acuity began from six weeks to six months after the accident. The author, therefore, regards it as possible for a traumatic cataract to develop without a direct lesion. The mechanism would be a lesion of the crystalline epithelium, which would permit the aqueous infiltration of the organ.

Criminality and Criminals

At the annual convention of medicolegal experts, Dr. Postma presented a communication on the mentality of criminals and on the practical questions that the problem raises. He divided the criminals first into several categories according to the state of their moral and physical health. He put the incorrigibles in one class and those who were amenable to improvement in another class. The present system of prisons with cells should be entirely abandoned, for human beings cannot remain mentally healthy unless they have the opportunity of enjoying the society of their fellow men. In the treatment and management of imbeciles and moral weaklings during their earlier years, the chief emphasis should be laid on the avoidance of crime. The present penal code holds too closely to the criminal fact and considers too little the individual criminal. In the preparation of a new penal code, the collaboration of a psychiatrist and a psychologist is needed. The psychologic study should, of course, retain a purely medical basis.

The Management of Tuberculous Patients After Dismissal from the Sanatorium

Dr. Bronkhart and M. Serrarens have just published an interesting monograph concerning the evolution of ideas with respect to protracted courses of treatment in antituberculosis sanatoriums; on the results of such treatment, and on the future management of patients after leaving such sanatoriums. From a comparative inquiry instituted in the different countries, it became evident that sanatorium treatment, if it is to be efficacious, must be confined to cases in which bacillosis has been demonstrated. But even when a careful selection of patients to be treated has been made, it should be remembered that, after a stay of six months or more in a sanatorium, a patient who has been allowed again to take up a normal existence remains, in spite of everything, a partial invalid who is unable to cope satisfactorily with the difficulties that arise in the struggle for existence. It is with a view to making more efficacious and more permanent the results accomplished by the sanatorium that the after-treatment should be organized.

The reason why the lasting results are not more satisfactory in the case of patients who have been discharged from sanatoriums is that, after their dismissal, the majority do not remain under medical control, and in nearly every case

lead a life that is not subject to sanitary discipline. After-care should be extended not only in the medical sense but also from the social standpoint. At the present time, medical care is partly assured by the dispensaries and by the home visits of visiting nurses, who thus keep up, in a measure, the supervision of the patient. But from the social standpoint the question is much more complex. If a tuberculous person is compelled to struggle for the means of subsistence, he is frankly handicapped in his endeavor to attain a complete recovery. The authors do not believe that agricultural work is indicated in the case of all who leave the sanatorium. For many, such work is too hard, and then again, they are too much exposed to inclement weather. According to their view, it would be much better to organize colonies in which many different trades would be represented, so that a real village would be established. All the inhabitants of the village would be subject to constant medical supervision, and the management of the enterprise would keep in close touch with the tuberculosis sanatoriums. In order to make a notable success of the undertaking, it would be advisable to create a regional commission in every large center where there are numbers of patients who have been discharged from tuberculosis hospitals, with a view to building up gradually a general organization.

School of Midwifery

At the time of the visit of the medical hygienists who were sent by the health committee of the League of Nations, Dr. Meuleman made a comparative study of the instruction given to midwives in the principal countries of western Europe. Whereas England, Germany and Austria require an attendance on courses of from six to nine months, at the most, which the author regards as by no means sufficient, Belgium and France have organized a school with a two years' course, and, in the Netherlands, the complete course in midwifery comprises three years of study. The first year's instruction covers the theoretical courses in anatomy, physiology and obstetrics. During the second year, the pupils assist at confinements and receive instruction in obstetric pathology and in the rearing and training of children. Toward the end of the second year, they begin to take independent charge of obstetric cases. The third year is a year for the practical demonstration of their ability and capacities.

The Relation of Supervising Physicians to Attending Physicians

After many long discussions in the industrial medical societies on the subject of the medical control of accident and health insurance, certain rules have been adopted as determining the relations between supervising physicians and attending physicians. The attending physician will hold himself ready to give to the supervising physician all the information that he can give him consistent with the right of privileged communication. The date when the insured shall resume work should be decided preferably by the supervising physician, but the latter must refrain from giving any suggestion as to treatment, even though the patient should request him to do so. Any opinion, suggestion or observation of a therapeutic nature or otherwise, or any controversy as affecting the two physicians, must not be discussed in the presence of the patient or his family, and any letter dealing with any such question must be sealed. The attending physician will refrain from giving the patient any kind of a certificate or attestation if he knows that the patient is in communication with a supervising physician.

In case of differences of opinion arising between the supervising and the attending physician, arbitration may be demanded by either party. The committee of arbitration will consist of the attending physician, the supervising physician and a third physician agreed on by the contending parties.

BELGIUM

(From Our Regular Correspondent)

July 29, 1924.

The Medical Convention at Brussels—The Opening Session

The fourth session of the Brussels medical convention (*Journées Médicales*)—which has become a regular institution and the most important medical event occurring in Belgium—scored a remarkable success, even greater than last year. More than 1,500 were enrolled, among whom a great many foreign guests were observable, more particularly at the opening address, which was presided over by M. Poulet, minister of health. France, Japan, Switzerland, Luxemburg, Morocco, Canada and Roumania sent official delegates, each of whom delivered an address, which was warmly applauded. M. Parisot, the Canadian delegate, who referred to the nucleus of Latin culture in French Canada, received an especially hearty welcome. The opening session closed with an excellent lecture by Dr. Alexis Carrel on "Les tréphones cellulaires et leurs fonctions." In connection with his researches on the artificial culture of cells, he pointed out that, in order to obtain serums that would persist for a long period of time, other nutrients are needed than those contained in the blood serum; for the cells, special materials are required—the cellular trephones—that is, substances produced by other cells.

This year, as in previous years, the organization of the convention provided for a theoretical and for a practical side. It is impossible in this brief résumé to review the countless communications that were presented during the convention, not only in the large auditoriums where the crowds of physicians were gathered, but also in the various services of the hospitals and clinics of the capital, where every participant could find, according to his taste and his specialty, courses of instruction boiled down to a few hours of common study. I will confine myself, therefore, to a summary of the principal communications that my attendance at the convention allowed me to estimate.

THE PATHOGENESIS OF CHOLERA

In a comprehensive and interesting study, Dr. Cantacuzène set forth the present-day conceptions of cholera. Cholera is an intoxication—often an acute intoxication. Every choleraic infection develops in the mucosa of the small intestine. It seems that infection occurs through the mouth, the tonsils, by the parenteral route or the intestine, and that it is in the mucosa of the intestine that vibriolysis takes place, which alone causes intoxication. This phenomenon does not occur if the intestine is in a normal condition. On the other hand, if the intestine has undergone certain changes, there is a cyclic struggle in the mucous membrane: first, vibriolysis; then, establishment of a lysoresistant strain; next, sensitization of this strain; then, again, vibriolysis on an ever-increasing scale. The experiments performed in the laboratory of Dr. Cantacuzène showed that filtered extracts of the intestine have no action on the laboratory vibrio strains. They exert, however, an influence on vibrio strains derived from the organism.

An interesting point to note was an explanation given by the author for the cessation of an epidemic of cholera. Successive multiple passages cause the vibrio strains to become absolutely lysoresistant. The organism being no longer able to bring about lysis of the vibrio, there is no longer any choleraic intoxication. There are only bacteria carriers.

EPIDEMIC (LETHARGIC) ENCEPHALITIS

Dr. Levaditi of the Pasteur Institute at Paris is a brilliant speaker, and charmed his audience by his substantial and colorful account of his researches on epidemic encephalitis. Since 1919, as the result of inoculations on the rabbit, he has

succeeded in securing a countless number of passages with a virus, which he considers, therefore, as fixed. From the anatomic standpoint, only the lesions of the gray substance are considered as specific, especially those at the level of locus niger (neuronophagia). Experimental researches have shown that the encephalitogenic virus has an affinity for the nervous tissue, the skin and the cornea. We are dealing here with a neurotropic ectodermosis, as is shown by the experiments on rabbits, which, after inoculation with a drop from a vesicle of herpes, develop keratitis and, later, symptoms of encephalitis. The author is studying at present a vaccine derived from the brain of a rabbit. When an injection is made into the cerebrospinal fluid, a marked reaction is produced. He reports results in both the acute and the parkinsonian phase.

GENERAL PARALYSIS AND MALARIA

Dr. Ley, in reporting the results of treatment of patients with general paralysis through inoculation with malaria, pointed out that he had obtained nearly 40 per cent. of recoveries. After the administration of quinin has caused the malarial symptoms to abate, treatment with tryparsamide, supplied by the Rockefeller Institute of New York, seems to be frankly superior. In view of the cures accomplished, Dr. Ley raises the question whether it will not be necessary to modify the medicolegal aspects of general paralysis. Does the supposed incurability of these patients still permit us to give certain advice or to apply the principle of the right of divorce with reference to the mentally sick?

INSULIN IN THE TREATMENT OF DIABETES

Dr. Labbé of Paris presented with remarkable clearness the problem of the treatment of diabetes with insulin. This new substance is, above all, the remedy for acidosis even more than for glycosuria. It should be administered especially to patients who are threatened with coma. In the treatment of uncomplicated cases of diabetes, the dietetic regimen has the same value as before.

RADIUM TREATMENT OF CANCER

Dr. Bayet described the present status of radium therapy in cancer. In spite of the many objections that have been raised, he still remains an advocate of surgical intervention in making favorable sites accessible for the placing of radium needles, which he leaves in situ for long periods. He discussed also the progress in the use of beta rays, and recalled the necessity of regarding cancer as a general disease of which the cancerous tumor is only one manifestation.

PLEUROTOMY WITH CLOSED THORAX

Many methods have been recommended to accomplish the evacuation of pus without admitting air into the pleural cavity. Dr. Grégoire described a procedure that interested through its simplicity. He makes an incision with a bistoury, obliquely, from below up, and from the surface to the deeper tissues, which are thus cut at different levels, and one comes to the surface again at an intercostal space higher up. It is in the nature of a valve incision; consequently, the pus can find egress but the air cannot enter. A narrow ribbon of caoutchouc introduced into the incision prevents too rapid cicatrization.

THE DAY AT LIÉGE

Every year, the organizers of the Brussels medical convention have planned an excursion to some city in the provinces. This year Liége was accorded this honor. At Liége, Professor Willems described his method of screw extension for fractures of the lower extremities. He then gave a talk on immediate active mobilization.

Professor Henrijean, in studying the cardiogram, showed that, in the last analysis, in the stimulation of the pneumogastric and the sympathetic nerves, the modifications of the beatings of the heart seem to reduce themselves to physicochemical phenomena in which the potassium and calcium ions play the principal rôle. Under these circumstances, the problem of the action of cardiac drugs must be viewed from a new angle.

BERLIN

(From Our Regular Correspondent)

July 26, 1924.

Reforms in the Medical Curriculum and in Examination Requirements

The preliminary investigations looking toward a reform in the medical curriculum and in examination requirements, to which I have referred somewhat in detail in previous letters, were brought to a close some time ago. Final action in the matter has now been taken by the federal ministry of the interior, and the new examination requirements have been published. The results do not seem to be commensurate with the vast amount of time and energy consumed by the investigators and the numerous publications of physicians and university instructors appearing in the form of monographs and articles in medical journals, together with the many special meetings called to discuss the subject. The reason for the apparently inadequate consideration given to the proposals for reform does not lie in any neglect or lack of sympathetic understanding of the problems involved but rather in the general economic stress, which affects very markedly the scientific life of Germany at the present time. It is difficult for persons living outside of Germany to form correct conceptions of conditions here, partly owing to misleading statements contained in the foreign press. Anything in the nature of sweeping reforms would require the lengthening of the medical course, for the ten semesters of study now required are so fully taken up with lectures that any attempt to add further courses would have been out of the question. The lengthening of the course could not be considered at the present time, owing to the fact that many students are compelled to earn part or all of their support by working part time in factories, offices, banks, etc. In establishing, therefore, the new medical curriculum and examination requirements, all that it seemed feasible to try to accomplish was to make better use of the available time than formerly, and, with this object in view, to make certain changes in the arrangement and duration of the lectures and in the form of the examinations. At some later period, when the essential reason for the torso-like character of the new curriculum—namely, the economic stress—need no longer be considered, it will then be the duty of the universities and the administration authorities to work out a more comprehensive revision than was possible under existing conditions.

With this preliminary explanation, I will proceed to give a survey of the more important changes that were introduced by the new decree. As before, the examination of candidates for the degree of doctor of medicine consists of two distinct parts; the preliminary test is given after completion of the natural sciences, together with anatomy and physiology, and the medical examination proper after the completion of the full course. But, whereas formerly the preliminary test was held in the middle of the course, it is now given at the end of the fourth semester, so that a longer period (six semesters) may remain for the better clinical training of the future practitioner. The preliminary test covers, as formerly, physics, chemistry, zoology, botany, anatomy and physiology. The requirements in anatomy have been simplified; in physiology, greater emphasis than formerly is placed on physiologic chemistry. As before, two years are devoted to the study of anatomic preparations, and one semester to the study of microscopic anatomic specimens. An important regulation

with reference to the preliminary test is, that in case it is not passed the first time, only one further trial is allowed, and that the second trial must be made before a board of examiners. Exceptions to this rule will be granted only for very particular reasons. The period that must elapse before a second trial may be made ranges from two to six months, dependent on the outcome of the first trial—which places greater restrictions on candidates than formerly. The period of clinical study required—at least six semesters—does not begin to run until the preliminary test has been satisfactorily passed by the candidate. During this three-year period, medical students are required to serve in a satisfactory manner as practicing assistant for two semesters each in the medical, surgical and obstetric clinics, respectively. Students are required, further, to take full, independent charge of at least four obstetric cases, as far as delivery is concerned. For the duration of one semester, they must act as assistants at the eye clinic, the medical and surgical policlinic, the clinic and policlinic for children, the psychiatric clinic, the clinics or policlinics for diseases of the ear, nose and throat, and at the clinic for cutaneous and venereal diseases. They must take part also in a practical course in vaccination technic. They must attend one course of lectures in general pathology and pathologic anatomy, special pathology, topographic anatomy, pharmacology, hygiene, orthopedics and legal medicine. They must take part also in an anatomicopathologic demonstration course, a course in dissection and a course in bacteriology.

The use of the policlinics for purposes of instruction is an innovation which was introduced in response to demands from all sides. In the test in topographic anatomy, the occupant of the chair and a representative of the surgical clinic, the clinic for internal diseases or the women's clinic will collaborate; the test in pathologic physiology (which may not occupy more than one day) is given by two examiners, one of whom must be a representative of internal medicine. The duration of the test in internal medicine and gynecology has been reduced from seven days to four days, while the test in surgery continues to occupy seven days, during which the candidate is required to visit on four different days the patients assigned to him. The test in ophthalmology covers two days; the tests in otology, laryngology, rhinology, pediatrics, cutaneous and venereal diseases, psychiatry and hygiene, respectively, occupy one day each. A second trial of the clinical examination, in case of failure to pass, is subject to the same regulation described in connection with the preliminary test. The clinical examination must be completed within the space of two years; otherwise, all examination credits won are declared forfeited. Pathologic physiology and legal medicine are subjects newly added to the examination requirements. Another new provision is that in the various subjects consideration must be given to the doctrine of hereditary transmission and to the bearing of medicine on social insurance.

When the candidate has completed his medical examination, he must, as formerly, serve a full year as hospital intern. During the year of his internship, the candidate must develop further his practical knowledge and capacities, and must give evidence that he possesses a satisfactory understanding of the duties and problems of a member of the medical profession. During his intern year, he must also study a case arising in the field of social insurance or rehabilitation, and prepare and present to the examining board a satisfactory written report in which he discusses with sufficient detail the patient's claim and rights under social legislation. When the candidate or medical intern has completed his year of internship in accordance with the requirements, he is granted his medical diploma—*die Approbation*, as it is termed here—which entitles him to practice anywhere within German territory.

Marriages

RICHARD GRAHAM FISH, Alamo, Tenn., to Miss Leila Eleanor Maddax of Poplar Bluffs, Mo., July 30.

AUGUSTUS LYNN LANDON BAKER, Dover, N. J., to Miss Margaret K. Powers of Stanhope, July 16.

JULIAN GLADYS HIRSCH, New Orleans, to Mrs. Dolly Halford Cowart of Meadville, Miss., July 30.

BERNARD CHARLES MARANTZ, New Haven, Conn., to Miss Sadye R. Rubin of Brooklyn, June 15.

MORTON S. BRODY, New Brunswick, N. J., to Miss Sophie Adele Sokoloff of New York, July 1.

LOUIS BLANCHARD WILSON to Mrs. Maud Headline Mellish, both of Rochester, Minn., August 23.

JULIAN KILLEM QUATTLEBAUM to Miss Helen Burkehalter, both of Savannah, Ga., June 21.

ELMER E. SEXTON, Carlinville, Ill., to Miss Katherine Homer of St. Louis, recently.

CORWIN SPENCER MAYES, Springfield, Ill., to Miss Lola Raney of Rochester, July 28.

GEORGE ROBERT MARSHALL to Miss Barbara Rosella Kelly, both of Seattle, June 11.

JACKSON WILEY LANDHAM to Miss Belle Moon, both of Atlanta, Ga., July 14.

ARTHUR SAUL SANDLER to Miss Reba Oster, both of Chicago, August 24.

Deaths

Louis Julien Picot, Littleton, N. C.; Jefferson Medical College of Philadelphia, 1873; member, and at one time president and secretary, of the Medical Society of the State of North Carolina; trustee of the State University of North Carolina, Chapel Hill, 1900-1909; for many years medical superintendent of the State Hospital, Raleigh; member and secretary of the state board of medical examiners, 1891-1896; aged 71; died, August 14, at a hospital in Norfolk, Va.

George Whipple Hubbard, Nashville, Tenn.; Vanderbilt University Medical Department, Nashville, 1879; one of the founders, president emeritus, and formerly dean, professor of chemistry, materia medica and therapeutics at the Meharry Medical College, Nashville; at one time superintendent of the hospital which bears his name; aged 83; died, August 22.

Thomas Henry Canning, Port Henry, N. Y.; University of Vermont College of Medicine, Burlington, 1900; member of the Medical Society of the State of New York; served in the M. C., U. S. Army, with the rank of captain, during the World War; formerly health officer of Port Henry and Moriah, N. Y.; aged 46; died, August 3, of pneumonia.

Brandreth Symonds ● New York; Medical Department of Columbia College, New York, 1884; lecturer on life insurance at his alma mater, 1907-1911; for thirty-six years connected with the Mutual Life Insurance Company and since 1907 its chief medical director; author of "Manual of Chemistry"; aged 61; died, August 10, of bronchopneumonia.

Charles Willis McLain, Gurdon, Ark.; Memphis (Tenn.) Hospital Medical College, 1909; member of the Arkansas Medical Society; served in the M. C., U. S. Army, with the rank of captain, during the World War; aged 42; was killed, July 26, when the automobile in which he was driving was struck by a train.

Herman Gilbert ● Madison, Wis.; University of Heidelberg, Germany, 1897; past president of the Dane County Medical Society; on the staffs of the Morningside Sanatorium, the Madison General Hospital and St. Mary's Hospital, where he died, August 13, following a long illness, aged 52.

A. J. Monahan, Pueblo, Colo.; Medical College of Ohio, Cincinnati, 1890; member, and at one time president of the Colorado State Medical Society; member of the state board of medical examiners; county health officer; formerly city and county physician; aged 55; was instantly killed, July 25, when the automobile in which he was driving overturned.

Samuel Elisha Woody ● Louisville, Ky.; Louisville Medical College, 1879; formerly professor of diseases of children at the Kentucky University Medical Department, Louisville;

aged 70; died, August 10, at the Norton Memorial Infirmary, of heart disease.

Warren Loring Beebe ● St. Cloud, Minn.; Medical College of Ohio, Cincinnati, 1873; Bellevue Hospital Medical College, New York, 1876; aged 76; died, August 13, at the Northern Pacific Railway Hospital, St. Paul, following a long illness.

Otto G. A. Oetting, Concordia, Mo.; University of Louisville (Ky.) School of Medicine, 1900; member of the Missouri State Medical Association; aged 47; died, June 23, at the Trinity Lutheran Hospital, Kansas City, as the result of a carbuncle.

William Leslie Cornwell, Bridgeton, N. J.; Jefferson Medical College of Philadelphia, 1906; member of the Medical Society of New Jersey; aged 41; died, August 4, at the Bridgeton Hospital, following an appendectomy.

William Sylvester Thompson, Augusta, Maine (years of practice); member and chairman of the Maine Board of Registration in Medicine; member of the board of education; aged 71; died, August 5, of chronic myocarditis.

William Gregg Crumbley, Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1912; served during the World War; aged 41; died, August 9, at Clayton, of a self-inflicted bullet wound while suffering from ill health.

Smith Seibert Davis, Boonsboro, Md.; University of Virginia Department of Medicine, Charlottesville, 1875; member of the Medical and Chirurgical Faculty of Maryland; aged 70; died, August 3, following a long illness.

John H. Chew ● Chicago; University of Maryland School of Medicine, Baltimore, 1863; president and emeritus professor of medicine at the Chicago Policlinic; aged 82; died, August 14, of carcinoma of the prostate.

Nathaniel Lorenz A. K. Slamberg ● Eastport, Idaho; University of Illinois College of Medicine, Chicago, 1892; acting assistant surgeon, U. S. Public Health Service; aged 69; died, August 1, of cerebral hemorrhage.

John William D. Mayes, Illiopolis, Ill.; Louisville (Ky.) Medical College, Louisville, 1876; formerly county physician of Sangamon County and president of the Illiopolis Board of Education; aged 71; died, August 1.

Samuel Wilson Hobson ● Newport News, Va.; Medical College of Virginia, Richmond, 1891; formerly member of the state board of health; aged 53; was found dead in bed, August 9, of heart disease.

John T. Harris, Walterhill, Tenn.; University of Tennessee College of Medicine, Memphis, 1898; member of the Tennessee State Medical Association; aged 51; died, August 4, at a hospital in Nashville.

David Dill Wilson ● Nortonville, Kansas; Rush Medical College, Chicago, 1890; formerly lecturer on orthopedic surgery at the Kansas Medical College, Topeka; died at his home, August 3; aged 63.

Allen Bonner McConnell ● Fresno, Calif.; Cooper Medical College, San Francisco, 1901; aged 46; died, August 8, at the University of California Hospital, San Francisco, of cholecystitis and appendicitis.

Notman Guthrie Catanach, West Chester, Pa.; Jefferson Medical College of Philadelphia, 1896; member of the Medical Society of the State of Pennsylvania; aged 48; was found dead in bed, August 16.

Mary Helen Barker Bates, Denver; Woman's Medical College of Pennsylvania, Philadelphia, 1873; for six years member of the board of education; aged 78; died, August 3, following a long illness.

James H. Ligon, Heflin, Ala.; Vanderbilt University Medical Department, Nashville, Tenn., 1891; aged 50; was instantly killed, August 2, when the automobile in which he was driving overturned.

Alfred M. Yundt, Mulberry, Ind.; Jefferson Medical College of Philadelphia, 1881; aged 68; died, August 4, at St. Mary's Hospital, Rochester, Minn., following an operation for carcinoma of the rectum.

Alexander H. C. Rowand ● Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1893; formerly on the staff of the Wills Hospital; aged 71; died, August 13.

Durand R. Kinloch, Utica, N. Y.; Albany Medical College, Albany, 1895; member of the Medical Society of the State of New York; died, August 7, aged 54, following a long illness.

Edwin Theodore Hayward, Waterford, Ohio; Bellevue Hospital Medical College, New York, 1896; member of the Ohio State Medical Association; aged 52; died, June 8, of angina pectoris.

Asa Howard Twitchell, Oldtown, Maine; Medical School of Maine, Portland, 1882; member of the Maine Medical Association; aged 72; died, August 3, following a long illness.

Florence Augustine Sullivan ● Haverhill, Mass.; Baltimore Medical College, 1900; member of the board of health; on the staff of the Hale Hospital; aged 48; died, July 15.

Charles William Ray, Chester, Vt.; College of Physicians and Surgeons, Baltimore, 1880; member of the Vermont State Medical Society; died, July 31, of heart disease.

Frederick Davis Mount, Philadelphia; Hahnemann Medical College of Philadelphia, 1879; aged 67; died, August 1, at the Jefferson Hospital, following an operation.

Edwin S. Heiser, Lewisburg, Pa.; Jefferson Medical College of Philadelphia, 1880; also a druggist; aged 68; died, August 3, of chronic lymphatic leukemia.

Ernest Perry Livingston ● New York; Medical Department of the University of the City of New York, 1892; died, July 29, of cerebral hemorrhage.

Francis Bean, Kansas City, Mo.; Medical College of Ohio, Cincinnati, 1876; member of the Illinois State Medical Society; aged 79; died, August 4, following a long illness.

Foster E. Wilson, Huntington Beach, Calif.; Cincinnati (Ohio) College of Medicine and Surgery, 1877; aged 71; died, July 30, at the Las Encimas Hospital, Pasadena.

August A. Des Lauriers, New Orleans; University of Minnesota Medical School, Minneapolis, 1903; formerly a practitioner in Duluth, Minn.; aged 45; died, August 4.

George B. Perry ● Brogueville, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1896; aged 60; died, July 31, following a long illness.

William C. Nunn, Richmond, Va.; Jefferson Medical College of Philadelphia, 1856; Confederate veteran; formerly state senator; aged 89; died, August 7.

William Penn Hammond, Boston; Medical School of Harvard University, Boston, 1873; aged 80; died, August 9, at Clifton, following a long illness.

Edward Meyer ● Manitowoc, Wis.; Rush Medical College, Chicago, 1887; aged 58; died, August 12, at the Holy Family Hospital, of heart disease.

Joseph Broders Grimes, Pittsburgh; Bellevue Hospital Medical College, New York, 1875; aged 72; died, July 9, of cerebral hemorrhage.

Francis S. Grimes, Deep River, Iowa; Bellevue Hospital Medical College, 1862; Civil War veteran; aged 91; died, August 7, of senility.

Elizabeth M. Squier, Utica, N. Y.; University of Buffalo Department of Medicine, 1893; aged 78; died, August 4, of cerebral hemorrhage.

James B. Stevens, Valdosta, Ga.; Meharry Medical College, Nashville, Tenn., 1901; also a druggist; aged 55; died suddenly, July 17.

Francis R. Seager, Brigden, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1870; aged 78; died, July 15.

Horace Greeley Murdock, Taylors Falls, Minn.; Rush Medical College, Chicago, 1881; aged 66; died, August 4, of heart disease.

William Edward Spencer, Whitestone, N. Y.; Long Island College Hospital, Brooklyn, 1881; aged 64; died, July 28.

Charles H. Fegers, Sr., McHenry, Ill.; Chicago Medical College, 1879; aged 78; died, August 7, of heart disease.

Charles William McGavren, Pasadena, Calif.; Rush Medical College, Chicago, 1879; aged 67; died, August 3.

Joseph Weathersby, Taylorsville, Miss. (licensed, Mississippi, 1882); aged 85; died, June 23, of senility.

Spencer C. Relyea, Dallas, Texas; Louisville (Ky.) Medical College, 1881; aged 70; died, August 5.

William A. Buchanan, Paris, Ill.; Miami Medical College, Cincinnati, 1875; aged 76; died, August 8.

Corrections.—The reports in THE JOURNAL of the death of Drs. T. Henry Davis, Richmond, Ind. (August 16, p. 549), and of Jacob Milton Hopkins, Alexandria, Va. (August 23, p. 631), were in error. It was Dr. Davis' wife who died; and a Jacob Hopkins of Galax, Va.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

FATAL ANAPHYLAXIS FROM HEMOPLASTIC PREPARATIONS

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report. W. A. PUCKNER, Secretary.

In THE JOURNAL for May 10, 1924, Dr. J. B. De Lee, Chicago, reported the case of a mother who suffered a severe hemorrhage following labor. The bleeding could not be stopped by the use of pituitary extract or ergot, but the uterus was packed and the hemorrhage ceased. After the packing was removed, however, the discharge was profuse and red and, since ergot and hydrastis failed to cause any diminution, it was decided to administer a hemoplastic preparation (Hemoplastin—Parke, Davis and Co.). Within one and one-half minutes after this preparation was administered, the patient developed severe symptoms and died five or six minutes later. All attempts at resuscitation failed. It was discovered afterward that the patient was a sufferer from asthma and that the attacks were elicited by even the mere approach of a horse. Dr. De Lee stated that record had been found of another instance in which death occurred a few minutes after the administration of hemoplastin to a woman sensitized by the previous injection of horse serum.

Because of the importance of determining definitely the anaphylactic possibilities of various blood coagulants, the Council arranged with Dr. Ludvig Hektoen to examine specimens of the various coagulants available to determine whether or not they contained material which might produce such reactions. He was provided with specimens of the following:

Coagulen-Ciba	Thromboplastin-Lederle
Fibrogen-Merrell	Thromboplastin-Squibb
Hemagulen-Lilly	Thromboplastin Hypodermic-Squibb
Kephalin-Armour	Thromboplastin Solution-Armour
Hemostatic Serum Lapenta (Hemoplastin)-P. D. & Co.	Precipitated Horse Serum (Coagulose)-P. D. & Co.

It was found that all of the specimens contained animal protein (in most products horse or beef proteins were present). In most cases the labels and descriptive literature did not state the precise nature of the coagulant. Obviously in the hurry and excitement of the moment, for coagulants are usually used in emergencies, the physician might overlook the danger of introducing these foreign proteins into a hypersensitive person. Even the superficial application to a wounded surface of coagulants of this sort might be followed by disastrous consequences. Since all of these products contain animal proteins, and in most instances horse or beef proteins, physicians should be warned against their use in any case in which there is a hypersensitivity to such substances. Hypersensitivity to horse proteins is not at all an infrequent condition. Much could be gained by having all such preparations labeled correctly and definitely. The label should contain not only a definite statement of the composition of the product and the character of the protein present, but also information which would cause the physician to inquire into the patient's history to determine whether or not sensitivity existed and which might induce him to determine by preliminary administration of small doses, whether or not a reaction would occur.

Measles Incidence in 1923.—In 1923, 211,372 cases of measles were reported by seventy-seven cities. The estimated expectancy was 112,542 cases. The measles case rate in 1923 was 7.11 per thousand population. In 1922 it was 5.62 per thousand. Seventy-two cities were included in the figures for 1922.—*Pub. Health Rep.* **39**:1667 (July 11) 1924.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SULPHUR DIOXID TOXICITY

To the Editor:—Please state whether or not sulphur dioxid fumes in not very concentrated form, but breathed over a long period of time, would have to be considered injurious to the respiratory organs, and if so, how? JULIUS LINGENFELDER, M.D., Rosebud, Mo.

ANSWER.—To those not accustomed to sulphur dioxid, the inhalation of it produces irritation of the respiratory passages, and extreme discomfort in dilutions of 0.001 per cent. by volume; 0.1 per cent. is stated to be promptly fatal by paralysis of the respiratory center (Ogata, 1884, and K. B. Lehmann, 1893).

Dr. T. F. Harrington of the Massachusetts Board of Labor reported a fatal case of sulphur dioxid poisoning in a man, aged 42, employed as a night foreman in a chemical establishment, with symptoms of cough, dyspnea and suffocation. Necropsy revealed marked irritation of the respiratory tract, edema of the lungs, marked congestion of the liver, spleen and kidneys, bright red eruptions on the elbows, and marked cyanosis.

According to Hayhurst and Kober (Industrial Health, Philadelphia, P. Blakiston's Son & Co., 1924, p. 661), in moderate concentrations sulphur dioxid is considered to be well borne without inconvenience or injury; persons accustomed to the gas bear very well a proportion of from 0.003 to 0.004 per cent. of sulphur dioxid in the air. Susceptible persons, at the beginning of their employment in an atmosphere containing sulphurous acid, manifest a transient irritation of the mucous membrane of the respiratory organs and of the eyes. In severe action, the symptoms are those of spasmodic cough with secretion of tenacious, often blood-tinged, mucus. The protracted effect of a high degree of concentration is livid discoloration of the mucous membranes, bronchial catarrh, croupous angina of the bronchi and their branches, and inflammatory areas in the lungs, and disturbances of digestion.

SCARLET FEVER TOXIN

To the Editor:—We have been reading with great interest the articles in THE JOURNAL during the last few months regarding the development of means to prevent scarlet fever. When will this scarlet fever toxin be available to the profession for doing immunity tests? Is there any indication that the toxin and antitoxin will soon be available for treating and immunizing patients? W. E. WILSON, M.D., Northfield, Minn.

ANSWER.—The scarlet fever toxin has been furnished by the John McCormick Institute to some state and city health departments. Physicians inquiring for this material are therefore referred to their local health department.

There is an increasing demand for standardized toxin that the Drs. Dick believe should be met; however, because the toxin must be standardized on human beings, the commercial companies are going to find it difficult to standardize accurately. Drs. Dick suggest that for the present some fund should be established for the production and distribution of the toxin and for furnishing instruction as to its use. An effort should be made to get it into the hands of the health officers, and let them in turn instruct physicians in its use.

"'CARBONA' JAG"

To the Editor:—In THE JOURNAL, August 9, G. W. H. asks regarding the use of "Carbona" inhalations to produce intoxication.

I have heard of this use once before. When my daughter returned from school in June, she told of a new amusement, known as the "'Carbona' Jag," which was in vogue among a certain group of young people. Parties composed of members of both sexes go to a near-by park for their séance. On one occasion mentioned, a girl got hilarious, rolled on the ground, and laughed immoderately. She was so long in recovering from the effects of the drug that she did not get back to the dormitory before the closing hour, and had to be smuggled in.

RUPERT M. PARKER, M.D., Chicago.

DOSAGE INTERVAL FOR ARSPHENAMIN

To the Editor:—Is there an accepted standard length of time between intravenous injections of: (1) arsphenamin, (2) neo-arsphenamin and (3) sulpharsphenamin; that is, ten days, seven days or three times a week? H. L. D., M.D.

ANSWER.—The usual intervals are from five to seven days. There is no accepted standard interval.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Juneau, Sept. 2. Sec., Dr. Harry C. DeVighne, Juneau.
ARIZONA: Phoenix, Oct. 7-8. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.
DISTRICT OF COLUMBIA: Washington, Oct. 14. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.
FLORIDA: Tallahassee, Oct. 14-15. Sec., Dr. Wm. Rowlett, Citizens Bank Bldg., Tampa.
GEORGIA: Atlanta, Oct. 14-16. Sec., Dr. C. T. Nolan, Marietta.
HAWAII: Honolulu, Oct. 13-16. Sec., Dr. G. C. Milnor, 401 So. Beretania St., Honolulu.
IDAHO: Boise, Oct. 7. Dir., Mr. Chas. Laurenson, Boise.
IOWA: Des Moines, Oct. 1-3. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.
KANSAS: Topeka, Oct. 14. Sec., Dr. Albert S. Ross, Sabetha.
MASSACHUSETTS: Boston, Sept. 9-11. Sec., Dr. Charles E. Prior, 144 State House, Boston.
MICHIGAN: Lansing, Oct. 14-16. Sec., Dr. B. D. Harison, 707-8 Stroh Bldg., Detroit.
MINNESOTA: Minneapolis, Oct. 7-9. Sec., Dr. Thos. McDavitt, 539 Lowry Bldg., St. Paul.
MONTANA: Helena, Oct. 7. Sec., Dr. S. A. Cooney, Power Bldg., Helena.
NEW HAMPSHIRE: Concord, Sept. 11-12. Sec., Dr. Charles Duncan, Concord.
NEW MEXICO: Santa Fe, Oct. 13-14. Sec., Dr. W. T. Joyner, Roswell.
OKLAHOMA: Oklahoma City, Oct. 7-8. Sec., Dr. J. M. Byrum, Shawnee.
PORTO RICO: San Juan, Sept. 2. Sec., Dr. D. Biascoechea, San Juan.
RHODE ISLAND: Providence, Oct. 2-3. Sec., Dr. B. U. Richards, State House, Providence.
UTAH: Salt Lake City, Oct. 7. Sec., Mr. J. T. Hammond, Salt Lake City.
WYOMING: Cheyenne, Oct. 6-8. Sec., Dr. J. D. Shingle, 226 Citizens Bank Bldg., Cheyenne.

Massachusetts May Examination

Dr. Charles E. Prior, secretary, Massachusetts Board of Registration in Medicine, reports the written, oral and practical examination held at Boston, May 13-15, 1924. The examination covered 17 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 33 candidates who took the physician's and surgeon's examination, 25, including 1 osteopath, passed, and 8 failed. One candidate was licensed on endorsement of credentials. The following colleges were represented:

PASSED	Year Grad.	Per Cent.
Hahnemann Medical College and Hospital of Chicago	(1908)	75
Loyola University School of Medicine	(1918)	78.5
State University of Iowa, College of Medicine	(1919)	85.5
College of Phys. and Surgs., Boston	(1918) 78.4, (1923)	75
Harvard University	(1910) 86.2, (1920) 83.4, (1922) 80.6, 89.7, 93.5, (1923) 88.1	
Middlesex College of Medicine and Surgery	(1923)	77, 77.7
Tufts College Medical School	(1923)	82.1, 83.6
St. Louis College of Physicians and Surgeons	(1923)	81.3
New York Homeopathic Med. Coll. and Flower Hosp.	(1920)	78.5
Dalhousie University Faculty of Medicine	(1923)	86.6
School of Medicine and Surgery, Oporto, Portugal	(1903)*	77.1
University of Moscow, Russia	(1916)*	84.5
University of St. Vladimira, Kief, Russia	(1912)*	75
University of Warsaw, Russia	(1920)*	79.6
Syrian Protestant College, Beirut	(1911)* 79.4, (1912)*	78.8
Osteopath		76.7

FAILED	Year Grad.	Number Failed
Middlesex College of Medicine and Surgery	(1922), (1923, 2)	3
St. Louis College of Phys. and Surgeons	(1921), (1923, 3)	4
National University, Athens, Greece	(1922)*	1

ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Johns Hopkins University	(1921)	N. B. M. Ex.

* Graduation not verified.

Basic Instruction in Outpatient Department.—The outpatient department gives an opportunity for instruction in health. The approach to health through sickness may not be the ideal approach; but for the adult, at any rate, it makes it possible to reach many individuals who would not otherwise come in contact with health teaching. Frequently the treatment and cure of a disease involve a modification in the manner of living, or the manner in which a disease was acquired may point the way of avoiding such infections in the future. The care of the individual patient presents the opportunity to point out to that patient methods of maintaining health.—Smith, R. M.: *Hosp. Social Service* **10**:24 (July) 1924.

Book Notices

LOCAL ANAESTHESIA METHODS AND RESULTS IN ABDOMINAL SURGERY. By Prof. Dr. Hans Finsterer, Surgeon-in-Chief, Vienna Hospital of the Brothers of Charity. Authorized English version by Joseph P. F. Burke, M.D., Sc.D., LL.D., Attending Surgeon, Buffalo Hospital of the Sisters of Charity. Cloth. Price, $4. Pp. 349, with 42 illustrations. New York: Rebman Company, 1923.

This work is divided into a general part and a special part. The first begins with a historical introduction, including the development of local anesthesia in abdominal surgery. It then points out the importance of local anesthesia as influencing the results of abdominal operations; takes up the indications and contraindications of local anesthesia; discusses the various solutions and technics of injections, and discusses the sensibilities and innervation of the abdominal cavity and the method of anesthetizing in abdominal wall anesthesia; conductive anesthesia of the mesenteries; paravertebral anesthesia; splanchnic anesthesia according to Kappis; splanchnic anesthesia with open abdomen according to Braun; parasacral anesthesia; epidural anesthesia (sacral anesthesia), and lumbar anesthesia. The second goes into the detailed technic of local anesthesia in various operations, grouping these into three classes: (1) minor operations; (2) operations of medium severity, such as operations for the various types of external hernia, appendicitis and exploratory laparotomy, and (3) major abdominal operations. The discussion of the later comprises more than half the book, and is in reality not only a detailed treatise of the technic, contraindications and indications of the various types of anesthesia employed in operations within the abdomen, but also a textbook of abdominal operative surgery, dealing particularly with operations for gastric and duodenal ulcers and carcinoma. The book is essentially a record of Finsterer's experiences, with statistics of anesthesia and of operative methods, particularly for the cure of gastric and duodenal ulcers and carcinoma. The author goes into detail in his plea for radical gastric resection for gastric and duodenal ulcers, and his experience and statistics sanction the position he takes, for his low mortality and excellent late results cannot be ignored. While his views may be at variance with the opinions of many conservative surgeons, they will be of great interest to all American surgeons. The work gives an excellent account of the various types of local anesthesia and their relative indications in abdominal operations. Unfortunately, the book is not so easy to read in its English form as was the original for those who read German.

THE ANATOMY OF THE NERVOUS SYSTEM. From the Standpoint of Development and Function. By Stephen Walter Ranson, M.D., Ph.D., Professor of Anatomy in Northwestern University Medical School. Second edition. Cloth. Price, $6.50 net. Pp. 421, with 284 illustrations. Philadelphia: W. B. Saunders Company, 1923.

The anatomy of the nervous system is presented from the dynamic point of view, the developmental and functional significance of structure being emphasized. The needs of the medical student have been kept in mind and those phases of the subject emphasized which are most likely to be of value in his subsequent work. To this edition three colored figures illustrating the blood supply of the brain have been added, also a series of figures representing sections through the basal ganglions and internal capsule, and brief accounts of twelve clinical cases selected to illustrate the functional significance of parts of the nervous system. There is an outline for a laboratory course in neurology, and an extensive bibliography.

WAR AGAINST TROPICAL DISEASE. Being Seven Sanitary Sermons Addressed to All Interested in Tropical Hygiene and Administration. By Andrew Balfour, C.B., C.M.G., Director-In-Chief, Wellcome Bureau of Scientific Research. Cloth. Price, 12 shillings, 6 pence net. Pp. 219, with 180 illustrations. London: Baillière, Tindall & Cox.

This volume, issued under the auspices of the Wellcome Bureau of Scientific Research, contains much advice on the hygiene of the tropics, including the following subjects: aspects of tropical sanitation; tropical problems in the New World; preventive inoculation against typhoid and cholera; the medical entomology of Saloniki; sanitary and insanitary

makeshifts in the eastern war areas; the problem of hygiene in Egypt, and the palm from a sanitary standpoint. The book is written in a simple narrative form, with numerous anecdotes and a large number of excellently chosen illustrations, which carry to the reader not only the technical aspects of the problem, but also the exotic atmosphere of the tropics. For the general reader who wishes a survey of this unusual phase of medical science, the book of Dr. Balfour may be heartily recommended.

FIRST STEPS IN ORGANIZING A HOSPITAL. An Exposition of Ideals and Principles Incident to the Inception and Organization of a Hospital. By Joseph J. Weber, M.A., Editor, The Modern Hospital. Cloth. Price, $2.75. Pp. 205. New York: Macmillan Company, 1924.

The introduction of this book is devoted largely to statistics on the growth and extent of hospital service in the United States, which are partly quoted from THE JOURNAL. The 232,099 beds allotted to homes for orphans, the aged, the blind and the deaf doubtless represent the total capacity, since recent compilation shows that 24,936 beds in these institutions are used for hospital purposes. The first step toward a hospital is a survey of the community. This is the subject of a long chapter giving important and valuable advice on how to find whether the given community needs a hospital and, if so, what kind. The second chapter tells how to get the organization under way and how to secure the interest of the public. Other chapters deal with the duties and responsibilities of the board of trustees, and valuable suggestions on financing the hospital construction and the organization of auxiliary bodies. The appendix contains suggested constitutions and by-laws and articles of staff organization, as well as forms of agreement between owner and architect and other valuable data. It is not possible to write a book that will answer all questions or that will touch on all the problems of a given community. It will always be necessary to use a great deal of original thought and investigation in adapting a proposed hospital to the needs of any community. Mr. Weber's book is of handy size and, at the same time, goes about as far as can be expected of a book toward offering assistance to prospective organizers and builders of hospitals.

THE WONDER OF LOURDES. What It Is and What It Means. By John Oxenham. Cloth. Price, 90 cents net. Pp. 62, with 16 illustrations. New York: Longsmans, Green & Co., 1924.

Mr. John Oxenham is a journalist who seems to have written some forty novels and some sixteen books of poetry in his brief career. It appears now that he has visited Lourdes, and become convinced of its healing virtues, testifying to the fact that four thousand incurables were there healed. His concluding sentence is, "For myself, I believe Lourdes to be a genuine revelation of the goodness of God to a world which, every day, stands more and more in need of it." Properly to discuss Mr. Oxenham's book would require a new marshaling of all the established facts regarding mental and faith healing; in view of the fact that Mr. Oxenham is a prolific writer of novels, and not a scientist, it seems hardly worth while.

PHYSICAL DEVELOPMENTAL RECORD FOR AMERICAN MALES. Paper. Cold Spring Harbor: Carnegie Institution of Washington, Eugenics Record Office.

The department of genetics of Carnegie Institution has prepared a special form to be used by parents in recording the physical development of their children, making a few simple measurements each month over a certain period of years, and agreeing to report annually to the Eugenics Record Office the results of the examinations. The record covers the period from 3 to 20 years of age.

THE PRINCIPLES AND PRACTICE OF DERMATOLOGY. Designed for Students and Practitioners. By William Allen Pusey, A.M., M.D. Fourth edition. Cloth. Price, $10. Pp. 1257, with 520 illustrations. New York: D. Appleton & Co., 1924.

This textbook, which has served the medical profession for a period of seventeen years, continues to meet the requirements of an up-to-date volume, by repeated, careful revisions. In his preface, Dr. Pusey calls particular attention to the fact that the subjects of eczema and syphilis have recently received a great share of the study of dermatologists, from the point of view of etiology in the case of eczema, and of treatment in syphilis. These advances have been given special consideration in the present volume. Dr. Pusey's book commends itself particularly on account of its extraordinary completeness. It has a double value, serving as an excellent book for students and as a reference volume for the practitioner.

DISEASES OF THE EYE. A Handbook of Ophthalmic Practice for Students and Practitioners. By George E. de Schweinitz, M.D., LL.D., Sc.D., Professor of Ophthalmology in the University of Pennsylvania. Tenth edition. Cloth. Price, $10 net. Pp. 865, with 441 illustrations. Philadelphia: W. B. Saunders Company, 1924.

The last previous revision of this book was made in 1921. In the present edition, special attention is given by the author to newer technical methods which have enabled ophthalmologists to extend still further their investigations, and to apply new methods in diagnosis and treatment. Special attention is paid also to such newer aspects of ophthalmology as agricultural conjunctivitis, senile changes in the optic nerve, and the use of new local anesthetics, such as butyn. This volume is a standard text, as indicated by the numerous and thorough revisions, expressive of constant demand.

SEX AND SOCIAL HEALTH. A Manual for the Study of Social Hygiene. By T. W. Galloway, Ph.D., Litt.D. Cloth. Price, $2.50 net. Pp. 360. New York: The American Social Hygiene Association, 1924.

The author has collected here some extensive discussions of various phases of sex in life. Before publication, the material was issued in mimeograph form to various persons who have given special attention to such matters, in order to secure revisions and suggestions. It was hoped to prepare a volume that might serve as a community text and as a basis for discussion by parent teacher groups, as well as a reference book in schools and colleges. The volume is divided into three parts, the first dealing with sex in life; the second, with the education of young people in respect to sex, and the third, with the community as a whole. The work seems to be sound in its point of view, and certainly provides a vast amount of information as to the various phases of sex life. Not every one will agree, perhaps, with its philosophy, but it gives at least the majority opinion on every ethical question. For any one interested in developments in this field of education, the book is practically indispensable, since it constitutes an excellent guide to the control of amusements of children, and of organizations and institutions so as to lead to better sex hygiene.

LEHRBUCH DER RÖNTGENDIAGNOSTIK. Erster Band und Zweiter Band. Herausgegeben von A. Schittenhelm. Paper. Price, $17.65. Pp. 1283, with 1,035 illustrations. Berlin: Julius Springer, 1924.

This encyclopedic volume is the result of the collaboration of many authors from Germany and Austria. It comprises the whole field of roentgen-ray diagnosis and a fairly complete description of the physics of the roentgen ray, methods of fluoroscopy, roentgenography and plate development. Each article describes the technic of film taking and discusses the fluoroscopic and roentgenographic views in various pathologic conditions dealt with in that section. The book is profusely illustrated by both plate reproductions and explanatory diagrams, and contains a voluminous bibliography.

THE MEDICAL DEPARTMENT OF THE UNITED STATES ARMY IN THE WORLD WAR. Volume XI, Surgery. Part Two. Empyema, by Lieut. Col. Edward K. Dunham, M.C.: Maxillofacial Surgery, by Lieut. Col. Robert H. Ivy, M.O.R.C., and Major Joseph D. Eby, D.O.R.C.: Ophthalmology (United States), by Brig. Gen. George E. de Schweinitz, M.O.R.C.: Ophthalmology (American Expeditionary Forces), by Col. Allan Greenwood, M.O.R.C.: Otolaryngology (United States), by Lieut. Col. S. J. Morris, M.C.: Otolaryngology (American Expeditionary Forces), by Col. James F. McKernon, M.O.R.C. Prepared under the direction of Major Gen. M. W. Ireland, M.D., Surgeon General of the Army. Cloth. Price, $3.50. Pp. 827, with illustrations. Washington: Government Printing Office, 1924.

The newest volume in the series of fifteen that are to consider the work of the Medical Department of the United States Army in the World War is devoted to certain phases of surgery, including particularly empyema, maxillofacial surgery, ophthalmology and otolaryngology. In the preparation of this volume, special help was given and articles were written by Lieut. Col. Edward K. Dunham, Lieut. Franklin A. Stevens, Major Evarts A. Graham and Col. William L.

Keller, who are largely responsible for the section on empyema. This section contains eight chapters discussing methods of collecting data, the diagnosis of empyema, and the various aspects of surgical treatment. The reports are illustrated by sixty-one tables, seventy-one charts, eight plates and 137 figures. This numerical cataloguing of special features is a slight indication of the scope of the report. The section on maxillofacial surgery was prepared by Lieut. Col. Robert H. Ivy and Major Joseph D. Eby. In a footnote to this report, the authors name all of those who aided in preparing the material for publication. The Section on ophthalmology was prepared by Brig. Gen. George E. de Schweinitz, with the aid of Col. Allan Greenwood. Col. James F. McKernon worked up the section on otolaryngology. This volume is one of the most practical and instructive that has been added to the series. It constitutes an excellent statement of the present status of our knowledge of the phases of war diagnosis and treatment that it covers. The printing is excellent and creditable to all who had a part in the production of the work.

LES PROCESSUS DE DÉSINTÉGRATION NERVEUSE. Par le Dr. Ivan Bertrand, Chef de laboratoire à la Faculté de médecine de Paris. Préface du Professeur Pierre Miare. Paper. Price, 20 francs net. Pp. 209, with 100 illustrations. Paris: Masson et Cie, 1923.

In this well illustrated book, the author has endeavored to trace the processes of degeneration of nerve tissue, first in a general way and later as it occurs in various diseases. Much of the material is derived from original observations, but is combined and correlated with those of modern workers. The book is well arranged and adheres to facts, pointing out the many possibilities of error and the difficulties dependent on the nature of the investigation. The bibliography is excellent, and there is a detailed index. Workers in the field of neuropathology will find the book of the greatest value and assistance both technically and in interpretation.

VENEREAL DISEASE. Its Prevention, Symptoms and Treatment. By Hugh Wansey Bayly, M.C., Hon. Sec. Society for the Prevention of Venereal Disease. Second edition. Cloth. Price, 7 shillings, 6 pence net. Pp. 176, with 58 illustrations. New York: Macmillan Company, 1924.

This presents the subject of syphilis and gonorrhea from the point of view of an English physician. Little space is given to any particular point, so that the work can have an interest only for students and general practitioners. The chapter on prevention is well worth reading; that on treatment gives the book real value.

THE HEALTH BOOK. By Royal S. Copeland, M.D. Cloth. Price, $2. Pp. 421. New York: Harcourt, Brace & Co., 1924.

Dr. Copeland has gathered under one cover much of the material that has appeared in his writings in the newspapers. The book contains numerous practical hints on first aid and on the care of minor diseases. Dr. Copeland is careful to emphasize repeatedly that most of the conditions discussed will require also the care of a physician.

DER HEUTIGE STAND DER LEHRE VON DEN GESCHWÜLSTEN IM BESONDEREN DER CARCINOME. Von Dr. Carl Sternberg, o. ö. Professor für Pathologische Anatomie an der Universität Wien. Paper. Price, 65 cents. Pp. 98. Vienna: Julius Springer, 1924.

This is an excellent statement of what is known in Germany at present concerning cancer. Little of the valuable work done in other countries has been taken into consideration, and to that extent the review fails to be a complete one.

DISEASES OF THE CHEST AND THE PRINCIPLES OF PHYSICAL DIAGNOSIS. By George William Norris, A.B., M.D., Professor of Clinical Medicine in the University of Pennsylvania, and Henry R. M. Landis, A.B., M.D., Director of the Clinical and Sociological Departments of the Henry Phipps Institute of the University of Pennsylvania. With a chapter on the Electrocardiograph in Heart Disease, by Edward B. Krumbhaar, Ph.D., M.D., Director of Laboratories of the Philadelphia General Hospital. Third edition. Cloth. Price, $9.50 net. Pp. 907, with 433 illustrations. Philadelphia: W. B. Saunders Company, 1924.

This edition has been revised, with the addition of brief accounts of certain rare conditions, with bibliographic notes to the original literature. The book is well known for its emphasis on the fundamentals of acoustics on which percussion and auscultation rest, for the correlation of pathology and physical findings, and for its plentiful illustrations, which include numerous photographs of frozen sections. The chapters on the electrocardiogram and on pediatric diagnosis are retained.

Miscellany

TREATMENT OF GENERAL PARALYSIS BY INOCULATION WITH PARASITES OF MALARIA

One hundred and five patients with general paralysis were inoculated subcutaneously (very rarely intravenously) by Warrington Yorke and J. W. S. Macfie with malaria—ninety-eight with simple tertian, six with quartan and one with malignant tertian (*Tr. Royal Soc. Med. & Trop. Hyg.* **18**:30 [March-May] 1924). Information is given regarding the incubation period and character of the fever and the mode and result of treatment. During the last twenty months, a strain of *Plasmodium vivax* has been transmitted by direct subcutaneous inoculation through twenty-three passages involving seventy cases. This procedure has apparently not been attended by any change in the parasite. Forty-one patients with general paralysis were infected with *P. vivax* by the bites of infective *Anopheles* mosquitoes. Information is given regarding the incubation period, and the mode and result of treatment. Both *Anopheles maculipennis* and *A. bifurcatus* were used for this purpose and proved equally susceptible to infection with *P. vivax*, and equally capable of transmitting the parasite to man. Evidence is adduced which, in the authors' opinion, renders the unicity hypothesis of the malaria parasites of man untenable. The malaria infections, whether induced by inoculation of virulent blood or by the mosquito, proved extraordinarily susceptible to treatment, a short course of quinin, 30 grains (2 gm.) for three consecutive days, being sufficient to sterilize the infection in sixty of sixty-one inoculated patients and in twenty-seven of thirty-one mosquito infected patients. These successes are contrasted with the frequent failures obtained in the treatment of simple tertian malaria during the war and in ordinary practice. Various hypotheses that have been advanced to explain the susceptibility of the induced malaria to treatment are considered, and found to be unsatisfactory. Evidence is produced to show that the susceptibility to treatment in the induced malaria is bound up with the fact that in these cases one is concerned with the treatment of primary infections. The mechanism by which a cure is obtained in malaria is considered at length, and the conclusion reached that the essential factor for the production of cures is the capacity of the host to produce an immune body in response to antigen formation, resulting from the destruction of a considerable number of parasites by a medicament. If, for any reason, the immune body formation is insufficient, the infection is not sterilized and a relapse occurs. The failure of treatment in chronic relapse cases is explicable on the same hypothesis; the parasites in such cases are not quinin resistant, but immune body resistant. Observations on the value of quinin prophylaxis showed that administration of the drug before infection is useless; that its administration must be continued for at least ten days after the infecting feed, to prevent infection from developing; and that the daily dose given has but little influence apart from the fact that with very large doses (2 gm.) the period for which the drug has to be given to prevent development of infection is a little shortened. It is concluded from these observations that quinin has little, if any, action on sporozoites, and that the mechanism by which development of infection is prevented is similar to that by which a cure is effected. So far as can be judged at present, the results obtained with the malaria treatment of general paralysis are most satisfactory. Of the eighty-four patients with general paralysis who have been observed for a sufficient time after treatment to warrant any conclusion, twenty-three (27.4 per cent.) have been, or are about to be, discharged as provisionally cured, seventeen (20.2 per cent.) have showed distinct mental and great physical improvement, and many of the remainder have improved physically.

Medicolegal

Must Tender Hospital Services and Medical Treatment

(Old Ben Coal Corporation v. Industrial Commission et al. (Ill.), 142 N. E. R. 507)

The Supreme Court of Illinois, in affirming a judgment that affirmed an award that included an allowance for hospital services and medical treatment for an injured employee, made under the workmen's compensation act of Illinois, says that the fact that as an emergency the employer had the employee taken to a certain hospital, from which the employee was the next day taken by his family, did not, in the absence of tender of competent service of that character after demand, relieve the employer from liability for such service. While the rule is, as often stated by this court, that the employer has a right to prescribe where the medical attention and hospital services shall be procured so long as they are such as are reasonably necessary and adapted to the purpose of treating the injured employee, yet the employer does not, because the employee goes to another hospital and thereafter demands medical and hospital services, avoid liability for such services without tendering other services of that character to him. In other words, the employer is not given the right, simply because the employee leaves the hospital to which the employer took him, to avoid all liability for hospital and medical treatment without tendering other services of like character, unless the facts show that the employee, by leaving the hospital, elected to secure a physician and hospital at his own expense.

Breaking of Hypodermic Needle in Tonsillectomy

(Mandelbaum v. Weil (N. Y.), 203 N. Y. Supp. 289)

The Supreme Court of New York, Appellate Division, First Department, in reversing a judgment for $1,623.10 that was entered in favor of the plaintiff and in holding that the complaint should be dismissed with costs, says that the plaintiff went to the defendant to have her tonsils removed. As she related her experience, she sat down on an ordinary stool. She told the defendant that she was a little nervous. He started putting a needle in her throat, and then she was in great pain. Suddenly he took out the tonsils, and she went home. That was around 1 or half past 1. Late that afternoon the defendant went to the plaintiff's house, informed her that the needle had broken off, and must be in her throat, he having looked all over the floor and been unable to find it. He then took her to a roentgenologist and had a roentgenogram taken. At about 6:30 or 7 p. m., the defendant took her to another physician, and they tried in vain to remove the needle. That same evening she was taken to a hospital, where ether was administered and an operation performed in an effort to remove the needle. She remained at the hospital five days. The effort to remove the needle was unsuccessful.

The first specification of malpractice, as the case was submitted to the jury, was that the defendant should have used a general anesthetic, and not a local one, but that was negatived by several physicians. The plaintiff's expert admitted that in this case it would have been proper to use a local anesthetic, instead of a general one, if the patient had not displayed nervousness. The plaintiff stated that she was slightly nervous, but the defendant said she was not. In any event, it was proved that the general practice is to use a local anesthetic, instead of a general one, in removing tonsils from an adult.

The second specification, as the trial court summarized the allegations of negligence for the jury, was that the defendant should have known of the breaking of the needle, and should at once so have informed the plaintiff. The testimony of the defendant was that he not only knew the needle had been broken, but in the exercise of good judgment he believed it proper not to communicate that fact to the plaintiff until she had an opportunity to recuperate through rest and sleep. It was apparent that he did know of the breaking of the needle, for later in the day he went to the plaintiff's house, told her about it, and proceeded to locate it and arrange for its removal. He secured, at his own expense, the services of a well known physician to remove it. He showed his anxiety to do everything possible for his patient and did not spare expense to himself. Malpractice was not shown by the fact that the needle broke, or that part of it remained in the plaintiff's body.

The third specification of negligence, set forth in the charge to the jury, was that the defendant should have extracted, or made efforts to extract, the needle, before he removed the tonsils. Immediately on discovering that the needle had broken, he did all in his power to locate and extract it. Such efforts having failed, he decided to proceed with the operation in the hope that he might find the needle in the tonsils when they were removed. The fact that he was unable to locate the needle would not justify an abandonment of the operation. The correctness of his judgment was shown by the subsequent developments.

Under the circumstances, this court is of the opinion that malpractice was not established.

Evidence of Malpractice in Treatment of Wound; Sepsis and Amputation

(King v. Belmore (Mass.), 142 N. E. R. 911)

The Supreme Judicial Court of Massachusetts says that the plaintiff was injured by being run down by a motorcycle. The defendant found an open wound on the calf of the right leg, dressed it, and on different days attended the plaintiff for a period of ten days. Then the defendant was dismissed and another physician called. About five months after that, the plaintiff's right leg was amputated. There was evidence that the defendant did not place a drain in the wound; that he put a white powder on it; that he never took the plaintiff's temperature; that after the defendant saw the plaintiff for the last time, on that same day, about a cup of pus came from the wound under the bandage. On the other hand, on the testimony of the defendant it could have been found that the care and treatment which he administered to the plaintiff were skilful and proper; but the jury was not obliged to believe his testimony, and could have found that the wound was infected, and that pus formed after the accident. It was for the jury to determine whether in the exercise of reasonable skill the defendant should have discovered the condition of the plaintiff, and whether the treatment under the circumstances was skilful or otherwise. It was uncontroverted that the defendant did not learn at any time during his attendance on the plaintiff that pus had formed or that there was a fracture of the fibula, as appeared from the undisputed testimony.

Again, while the defendant testified that when he first saw the plaintiff at his office the first thing he did after looking at the wound was to cut the plaintiff's trousers and underdrawers from the bottom to the hip with scissors, and that otherwise he would not have been able thoroughly to clean and treat the injury, there was testimony from other witnesses that the trousers were not cut or slit as described by the defendant. If the jury found that the wound was treated without either removing or cutting the trousers, it could have found that it was not cleaned at that time so as to avoid infection. It was manifest that, on all the evidence, the defendant's motion for a directed verdict in his favor could not have been allowed; and that the jury could not properly have been instructed that the plaintiff was not entitled to recover damages. That was a question of fact to be determined on the evidence with reasonable inferences which might be drawn therefrom. It was for the jury to say whether the defendant exercised such skill and care as members of his profession ordinarily would have exercised under corresponding circumstances.

The plaintiff obtained a verdict; but exceptions by the defendant are sustained. Especially is it held that instructions were erroneous and prejudicial to the defendant in which the trial judge told the jury in effect that, notwithstanding that it was not claimed that the fracture caused the loss of the leg and medical experts testified that it had nothing to do with sepsis in the leg, yet if the jury found from all the evidence that the fracture did cause the loss of

the leg, it would be necessary to consider that treatment, if any, had at any time been given for the fracture, because if there was no treatment given it would be necessary to find that the defendant was negligent in not discovering the fracture.

In substance, the jury should have been instructed, as requested by the defendant, that the fact that the plaintiff suffered sepsis and amputation of his leg did not raise a presumption of want of proper care, skill or negligence on the part of the defendant in his treatment of the plaintiff.

There was evidence that the defendant used certain "dust cloths" and strips from sheets furnished him by the plaintiff's mother for bandaging the wound. But there was no evidence to show, and the plaintiff's counsel did not contend at the trial, that such cloths and sheets were insanitary or improper for such use. The plaintiff and his mother testified that the dust cloths had been washed and were clean. Accordingly, an instruction on that point favorable to the defendant, and requested by him, but not set forth or described by the court, should have been given in substance.

In dealing with questions calling for expert medical opinion, much must be left to the discretion of the trial court; and his rulings will not be revised unless they are plainly prejudicial to the rights of the excepting party.

City Liable for Injury from Enema Given in Hospital

(City of Shawnee v. Roush (Okla.), 223 Pac. R. 354)

The Supreme Court of Oklahoma, in affirming a judgment for $10,495 in favor of plaintiff Roush, holds that a paying patient in a hospital conducted by a municipality may recover damages for injury done her through the negligence of attending nurses administering to her during an operation. The court says that the defendant city maintains and operates a hospital for the care of the sick, accepting some charity patients, but all patients able to pay for their care and treatment are charged therefor. The plaintiff entered the hospital at the regular weekly rate. During the period in which she was in the hospital, an operation was performed on her for gallbladder disease, and at the conclusion of the operation, a nurse employed by the hospital, as appeared to be customary, administered an enema to her, but the solution was so hot as to burn the patient severely. The city urged three main defenses: That there was no negligence in the administering of the enema; that if there was any negligence on the part of the nurse, the administering of the enema was done pursuant to the orders of the attending surgeon, and the hospital would not be liable; and, lastly, that even if the nurse was negligent in preparing and administering the enema, she was acting as the agent of the hospital, and that the hospital was not operated for gain or profit, but for governmental and charitable purposes.

The evidence showed that the physicians and surgeons were employed solely for the purposes of performing the operation; that the administering of the enema was an ordinary duty of the employees of the hospital, and that it was prepared by the supervisor of the operating room of the hospital and administered by another employee of the hospital as a usual incident to her duties as a nurse and servant of the hospital. These facts served to distinguish any cases and dispose of any argument on the proposition that the negligence was that of a servant of the surgeons rather than of the hospital. The test was whether the nurse was acting in the scope of her employment in the business of her master and employer. The evidence showed that she was so acting.

In support of the contention that the city was exempt from liability on the ground that the hosptial was conducted for governmental purposes, i. e., the protection of the public health of its citizens, a number of cases were cited, all bearing on the liability of municipalities wherein were involved the operation of police departments, fire departments, boards of health, and institutions such as pest houses and detention hospitals; but none of these does this court consider decisive of the proposition that was before it.

This left the question of whether the fact that the hospital was not operated for profit or gain and sometimes accepted charity patients would exempt it from its prima facie liability from suit. That, this court thinks, was decisively disposed of in the Alabama case of *Tucker* v. *Mobile Infirmary Association*, 191 Ala. 572, 68 South. 4, wherein the court reviews the authorities and logically treats them to the end that it is impossible now to support any claim of exemption on the part of an eleemosynary institution or an institution operated for other than profit or gain, at least as against the claim of a pay patient for negligence. This court completely affirms the Alabama court in its conclusion, leaving the creations of exemptions of this sort to the legislative department of government, if it deems them expedient.

Incipient Arteriosclerosis Not Mental Unsoundness—Guardianship Proceedings

(Huffman v. Beamer (Iowa), 197 N. W. R. 476)

The Supreme Court of Iowa, in reversing a judgment that sustained a petition in this proceeding for the appointment of a guardian for the defendant on the ground of alleged mental unsoundness, says that the utmost that could be said on the record adverse to the mental soundness of the defendant was that she had incipient arteriosclerosis. This is not mental unsoundness within the meaning of the law.

Theoretically, a guardianship proceeding is not adversary. It is supposed to be prosecuted and defended solely in the interest of the defendant. The proceeding bears some analogy to a will contest. In this class of cases, the supreme court scrutinizes the verdict more critically and interferes more readily than in any other class of litigation. The reasons for such scrutiny are even stronger in a guardianship proceeding than in a will contest. The courts cannot fail to observe the natural tendency of selfish interest to abuse this proceeding and to resort to it for wholly selfish purposes. The premature quarrels of expectant heirs are thrust on the natural repose due to old age, and often result in despoiling the common benefactor and in destroying his status, and in depriving him of the liberty to do as he will with his own and in compelling him to eat his own substance out of a stranger's hand.

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Oto-Laryngology, Montreal, Canada, Sept. 15-20. Dr. Luther C. Peter, 1529 Spruce Street, Philadelphia, Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Cleveland, Sept. 18-20. Dr. James E. Davis, 111 Josephine Avenue, Detroit, Secretary.

American Association of Railway Surgeons, Chicago, Oct. 15-17. Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.

American Child Health Association, Kansas City, Mo., Oct. 15-17. Dr. Philip Van Ingen, 125 East 71st Street, New York, Secretary.

American College of Surgeons, New York, Oct. 20-24. Dr. Franklin H. Martin, 40 East Erie Street, Chicago, Director-General.

American Electrotherapeutic Association, New York, Sept. 9-12. Dr. Richard Kovacs, 223 E. 68th Street, New York, Secretary.

American Public Health Association, Detroit, Oct. 20-23. Mr. Homer N. Calver, 370 Seventh Avenue, New York, Secretary.

American Roentgen Ray Society, Boston, Sept. 3-6. Dr. W. W. Watkins, Goodrich Building, Phoenix, Ariz., Secretary.

Colorado State Medical Society, Denver, Oct. 7-9. Dr. F. B. Stephenson, Metropolitan Building, Denver, Secretary.

Delaware State Medical Society, Milford, Oct. 14-15. Dr. W. O. LaMotte, Industrial Trust Building, Wilmington, Secretary.

Indiana State Medical Association, Indianapolis, Sept. 24-26. Dr. Charles N. Combs, 221 South 6th Street, Terre Haute, Secretary.

Kentucky State Medical Association, Louisville, Sept. 23-25. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Medical Association of the Southwest, Kansas City, Mo., Oct. 13-18. Dr. E. H. Skinner, Rialto Building, Kansas City, Mo., Secretary.

Michigan State Medical Society, Mount Clemens, Sept. 9-11. Dr. F. C. Warnshuis, Powers Theatre Building, Grand Rapids, Secretary.

Minnesota State Medical Association, St. Cloud, Oct. 8-10. Dr. Carl B. Drake, Guardian Life Building, St. Paul, Secretary.

Missouri Valley Medical Society of the, Des Moines, Sept. 17-19. Dr. Charles W. Fassett, 115 E. 31st Street, Kansas City, Mo., Secretary.

Nevada State Medical Association, Reno, Sept. 12-14. Dr. Claude E. Piersall, Masonic Temple, Reno, Secretary.

North Dakota State Medical Association, Bismarck, Sept. 10-11. Dr. H. J. Rowe, 3211 Upton Avenue, S., Minneapolis, Minn., Secretary.

Pennsylvania, Medical Society of the State of, Reading, Oct. 6-9. Dr. W. F. Donaldson, Jenkins Arcade, Pittsburgh, Secretary.

Vermont State Medical Society, Burlington, Oct. 9-10. Dr. W. G. Ricker, St. Johnsbury, Secretary.

Virginia, Medical Society of, Staunton, Oct. 14-17. Miss Agnes V. Edwards, 104½ West Grace Street, Richmond, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Gynecology, St. Louis

8: 1-130 (July) 1924

Newer Gynecology. B. C. Hirst, Philadelphia.—p. 1.
*Serum Treatment of Puerperal Sepsis. H. Bailey, New York.—p. 7.
Wassermann Test. D. L. Belding and I. L. Hunter, Boston.—p. 22.
Natural Immunity in New-Born. L. K. Musselmann, New Haven, Conn.—p. 45.
Diagnosis of Sterility in Male and Female. M. Huhner, New York.—63.
Intra-Uterine Contraceptive Pessary: Inefficient and Dangerous. R. S. Siddall, Detroit.—p. 76.
*Gynecologic Plastic Surgery Under Sacral-transsacral Anesthesia. M. O. Magid and W. Klein, New York.—p. 79.
Experimental Attempts to Promote Uterine Growth. M. R. Robinson, New York, and B. Zondek, Berlin, Germany.—p. 83.
Factor Controlling Weight of New-Born. R. T. LaVake, Minneapolis, Minn.—p. 99.
Urogenital Symptoms in Gynecologic Patients. W. T. Dannreuther, New York.—p. 103.
Extensive Carcinoma of Ovaries in Girl of Nineteen. R. L. Dickinson, New York.—p. 118.
Case of Krukenberg Tumor. O. A. Gorden, Brooklyn.—p. 120.

Serum Treatment of Puerperal Sepsis.—In fourteen cases of acute puerperal fever, of which six gave positive intra-uterine cultures of hemolytic streptococcus, the administration of polyvalent antistreptococcus serum was followed in eleven cases by the subsidence of the temperature and gradual recovery, giving a death rate, uncorrected, of 21.4 per cent. and corrected of 15.3 per cent. The administration of the polyvalent antistreptococcus serum, under the conditions outlined appears to Bailey to be comparatively harmless and of considerable value in the treatment of puerperal sepsis.

Sacral-Transsacral Anesthesia.—Magid and Klein report a series of cases operated on under sacral-transsacral anesthesia, with the hope of encouraging other surgeons to use this method, that their patients may be spared the discomforts and possible added shock of a general anesthetic. The possibility of lung complications is eliminated. Nausea, vomiting and thirst are absent. The patients are comfortable in every way and may be fed a fairly good meal, several hours after the operation. Another advantage is that liquids may be given to the patients during the course of the operation.

American Review of Tuberculosis, Baltimore

9: 389-490 (July) 1924

*Five Diagnostic Criteria of Pulmonary Tuberculosis in Negative Diagnoses. L. Brown and F. H. Heise, Trudeau, N. Y.—p. 398.
*Roentgen Ray in Classification of Suspected and Definite Pulmonary Tuberculosis. F. H. Heise and H. L. Sampson, Trudeau, N. Y.—p. 406.
*Tuberculosis of Pancreas. S. L. Van Valzah, Denver.—p. 409.
*Fatal Hemorrhage into Spleen from Tuberculous Ulcer of Bowel. S. A. Levinson, Chicago.—p. 418.
*Perforation of Ileum Due to Tuberculous Ulcer. W. B. Jameson, Hamburg, Pa.—p. 423.
Case of Pneumoperitoneum Treatments of Tuberculous Enterocolitis with Oxygen. R. L. Laney, Puposky, Minn.—p. 425.
*Prevention and Treatment of Digestive Disorders in Tuberculous Patients. J. L. Kantor, New York.—p. 430.
Mercury and Zinc Ions in Surgical Tuberculosis. G. B. Massey, Philadelphia.—p. 440.
*Bacteriologic Study of Case of Clinical Tuberculosis in Which Tubercle Bacillus Was Not Found in Sputum. M. A. Smeeton and L. F. Rettger, New Haven, Conn.—p. 443.
Sensitization with Non-Acid-Fast Tubercle Bacilli. F. A. McJunkin, St. Louis.—p. 464.
Experimental Tuberculosis of Guinea-Pig. III. Protein Concentration of Blood Serum and Erythrocyte Volume in Tuberculous Guinea-Pigs. Studies in Biochemistry and Chemotherapy of Tuberculosis. XXXII. L. Bender and L. M. DeWitt, Chicago.—p. 477.
Attempt to Determine Presence of Vitamines A and B in Tubercle Bacilli. R. L. Cunningham, Berkeley, Calif.—p. 487.

Diagnostic Criteria of Tuberculosis.—Of 203 nontuberculous cases admitted to Trudeau Sanatorium, 126 had no recognizable clinical disability. Of the 77 who were found to have a definite reason for disability, some form of nervous disturbance was found to be the most frequent cause (21 instances). Next in order of frequency were the postinfluenzal debilities (13 cases). Bronchitis of unknown origin occurred twelve times. Thyroid disturbances occurred in 5, syphilis in 4, enteroptosis in 4, malignant tumor of the lung in 2 and in one instance various conditions were found. In 126 cases no definite disability was diagnosed. A large proportion had "colds" or were run down from lack of physical rest. Recuperation followed closely on taking such a rest. From these findings it would seem that too much importance is placed on the toxic symptomatology in diagnosing tuberculosis rather than on the activity of the disease when its presence is assured by other methods. Furthermore, too great an importance is placed on the clinical findings at one examination. It frequently takes time to diagnose pulmonary tuberculosis. It cannot always be done at one examination, and repeated observations and examinations are often necessary. The subcutaneous tuberculin test was given to 214 patients: 82 failed to react to a repeated dose of 10 mg.; 132 reacted constitutionally and of these, 21 reacted focally as determined by physical signs. Forty per cent. of the nontuberculous, 34 per cent. of the "suspected" and 27 per cent. of the "nonclinical" failed to react.

Roentgenologic Classification of Tuberculosis.—Although a patient may have had an hemoptysis or a pleuritic effusion or a history of positive sputum of râles and the roentgen ray not show a characteristic tuberculous parenchymatous lesion, the prognosis seems to be quite good, since only 1.7 per cent. of 121 such cases examined by Heise and Sampson have died of tuberculosis within four years.

Tuberculosis of Pancreas.—Tuberculosis of the pancreas occurred once in more than 200 necropsies on tuberculous subjects at the Fitzsimmons General Hospital, Denver. The patient had had a chronic pulmonary tuberculosis affecting all lobes of both lungs. Occasionally he complained of pain in the abdomen, especially on the right side opposite the umbilicus. There was no glycosuria.

Fatal Hemorrhage from Spleen into Bowel.—A case of spontaneous fatal hemorrhage from the spleen into the bowel, with a tuberculous lienocolic fistula, is reported by Levinson.

Tuberculous Perforation of Ileum.—Jameson's patient had tuberculosis of the right upper lobe, and middle lobe and apex of the upper lobe of the left lung, and was classed as far advanced. Suddenly he developed a severe, general pain in the abdomen with marked tenderness in all its regions and a boardlike rigidity of its wall. The temperature rose to 100 F. and slightly above; the pulse rose rapidly and was high. The bowels remained closed and on the next day he began to vomit fecal matter. Death occurred twenty-four hours later. The necropsy disclosed a perforation of the wall of the ileum about 6 feet above the ileocecal valve. The opening communiated with an ulcer on the inner surface, and there were a few ulcers in the intestine in this region. No ulcers were seen until almost the ileocecal valve; in that region there was slight ulceration. The caput coli and the ascending colon showed ulceration extending for about 1 foot; none beyond that.

Good Nutrition Prevents Tuberculosis.—Kantor urges that malnutrition be treated among the population at large not only for its own sake but as an effective practical measure to diminish the morbidity of tuberculosis. Every tuberculous dyspeptic should be subjected to a comprehensive gastro-intestinal survey as early as possible in the course of the disease. The common digestive disorders should be treated promptly, not only to aid the recovery from the pulmonary disease but to avoid, if possible, the secondary localization of the specific infection in the digestive system.

Bacteriologic Study of Tuberculosis.—A member of the *Bacillus mesentericus* group appears in the instance reported by Smeeton and Rettger to have been the causal agent of a pseudotuberculosis indistinguishable clinically and roentgenographically from true tuberculosis.

Arkansas Medical Society Journal, Little Rock

21: 13-50 (July) 1924

"Laborer Is Worthy of His Hire." W. T. Wootton, Hot Springs.—p. 13.

Boston Medical and Surgical Journal

191: 141-188 (July 24) 1924

*Intestinal Obstruction in Children. W. E. Ladd and G. D. Cutler, Boston.—p. 141.
Mental Hygiene and Pediatrics. D. A. Thom, Boston.—p. 145.
Diagnosis of Endocrine Disorders. A. W. Rowe, Boston.—p. 151.
Influence of Internal Secretions on Growth and Function. C. H. Lawrence, Boston.—p. 157.
Reduction of Human Blood Sugar by Means of Insulin. S. H. Kahn, St. Louis.—p. 161.

191: 189-238 (July 31) 1924

Care of Neuropsychiatric Claimants by Veterans' Bureau. F. R. Sims, Boston.—p. 189.
Ureteral Stricture. N. P. Rathbun, Brooklyn.—p. 197.
Progress in Treatment of Syphilis. A. W. Cheever, Boston.—p. 206.
Medical Intelligence Bureau for Hot Springs National Park. L. M. Maus, Hot Springs, Ark.—p. 215.

Intestinal Obstruction in Children.—Eighty-eight cases of intussusception and seventeen cases of obstruction from other causes are analyzed by Ladd and Cutler. The youngest patient was 3 weeks old; the oldest 8 years and 11 months. Sixty-six patients were under 1 year of age. Two cases of intussusception occurred as a sequel to appendectomy; one before the patient was discharged from the hospital and one, two or three days after his discharge from the hospital. One case occurred during a diarrhea and one followed purpura. In patients in whom the invaginated bowel had not become so swollen and edematous that it could not be reduced, the mortality was high but not excessive. In this series there were seventy-two such patients operated on; fourteen of them died and fifty-eight recovered, a mortality of 19.4 per cent. Among the remaining patients on whom resection or enterostomy was performed the mortality was very high. Of nine cases in which resection and lateral anastomosis was performed eight proved fatal. The seventeen cases of obstruction due to causes other than intussusception were as follows: Three were subsequent to intussusception operations. Two occurred as a result of Meckel's divertculum becoming adherent across the ileum; one child recovered and one died. Three children had obstruction during the first ten days of convalescence following operation for appendicitis with peritonitis. Three cases developed months after appendectomies with drainage recovered by freeing of bands. In one patient from whom an enormous mesenteric cyst had been removed, obstruction resulted from a combination of narrowing the lumen of the bowel and adhesion of the appendix to the site of excision. There was one case of strangulation of a loop of ileum through a defect in the mesentery. In these seventeen cases of obstruction from varied causes, enterostomy was performed six times with five successful outcomes.

Florida Medical Association Journal, St. Augustine and Jacksonville

11: 1-32 (July) 1924

Surgery of Stomach. J. S. Horsley, Richmond.—p. 1.
Eventration and Hernia of Diaphragm: Three Cases. L. W. Cunningham and W. McL. Shaw, Jacksonville.—p. 7.
Present Status of Deep Roentgen-Ray Therapy. J. C. Dickinson, Tampa.—p. 19.
Migraine and Epilepsy. J. W. Draper, New York.—p. 23.

Georgia Medical Association Journal, Atlanta

13: 287-330 (July) 1924

Acidified Milk with Karo Syrup as Infant Food. W. A. Mulherin, Augusta.—p. 287.
Modified Breast Milk. W. L. Funkhouser, Atlanta.—p. 290.
Slowly Convalescent or Half-Sick Child. R. L. Miller, Waynesboro.—p. 293.
Thymus Gland in Infancy and Childhood. A. J. Waring, Savannah.—p. 295.

Indiana State Medical Association Journal, Ft Wayne

17: 205-238 (July) 1924

Blood Transfusion. W. D. Little, Indianapolis.—p. 205.
Colloid Thyroid. J. W. Snyder, Indianapolis.—p. 210.
Diagnosis and Care of Tuberculosis. F. A. Priest, Marion.—p. 212.
Arthritis of Spine: Two Cases. G. L. Homman, Laporte.—p. 218.

Journal of Bacteriology, Baltimore

9: 315-408 (July) 1924

Ostwald Viscosimeter for Determination of Liquefaction of Gelatin by Bacteria. F. W. Shaw, Rolla, Mo.—p. 315.
Clostridium Putrificum. III. Comparison of Strains from this Country and Abroad. G. F. Reddish, Richmond, Va.—p. 321.
*Fate of Bakers' Yeast in Intestine of Man and White Rat. L. F. Rettger, G. F. Reddish and J. G. McAlpine, New Haven, Conn.—p. 327.
Bacterial Disease of Silkworms. R. W. Glaser, Princeton, N. J.—p. 339.
*Lactobacillus Acidophilus and Lactobacillus Bulgaricus. W. L. Kulp and L. F. Rettger, New Haven, Conn.—p. 357.
Variation in Size of Lytic Areas; Significance. P. Hadley, Ann Arbor, Mich.—p. 397.
Staining Lytic Areas Produced by Bacteriophage. P. Hadley, Ann Arbor, Mich.—p. 405.

Fate of Bakers' Yeast in Intestine.—This report by Rettger, Reddish and McAlpine deals chiefly with (1) the influence of the host on the viability of yeast cells, (2) the influence of yeast feeding on intestinal bacteria, particularly the gas forming and the aciduric types, and (3) the physiologic action of pure bakers' yeast on mice, guinea-pigs and rabbits, when introduced by the subcutaneous, intravenous or intraperitoneal route. The investigation made by the authors dealt only with pure saline suspensions of bakers' yeast which were isolated on the malt extract agar used throughout the yeast studies and grown in pure culture on such agar preliminary to the preparation of saline suspensions for inoculation purposes. Bakers' yeast, when administered by mouth, underwent a rapid and extensive destruction in the alimentary tract. Less than 1 per cent. of the cells ingested escaped this destruction and appeared in the feces as living cells within twenty-four hours. After the discontinuance of yeast feeding both dead and viable cells rapidly disappeared from the intestine until by the end of three days relatively few, if any, remained. Most of the cells eliminated were dead, but there were always comparatively small numbers of viable cells which remained and grew readily on malt extract agar. No difference could be observed as the result of yeast feeding in the proportion of gram-positive and gram-negative organisms, or in the relative numbers of gram-positive rods of the acidophilus type as compared with all other intestinal bacteria: nor was there noted any influence of the yeast feeding on the amount of gas production in Veillon tubes. The injection of pure suspensions of living bread yeast in white mice, guinea-pigs and rabbits by the subcutaneous, intravenous and intraperitoneal routes failed to show evidence of injury, aside from the formation of a small firm nodule in two of the twenty-one animals employed. These nodules disappeared without suppuration or necrosis.

Lactobacillus Acidophilus and L. Bulgaricus.—The investigations made by Kulp and Rettger indicates a very close relationship between the members of the *Lactobacillus acidophilus* and *L. bulgaricus* types studied. The differences noted between these two types constitute evidence enough for classifying them as separate species. However, because of the various close relationships, it is suggested that they be placed in one and the same species of which *L. acidophilus* is the central type and *L. bulgaricus* a variant.

Journal of Biological Chemistry, Batlimore

60: 481-792 (July) 1924

Lead Studies. L. T. Fairhall, Boston.
IX. Solubility of Lead Compounds in Blood Serum.—p. 481.
*XI. Analyzing Urine for Lead.—p. 485.
*Influence of Insulin on Glucose-Fermenting Action of B. Coli. G. McGuire and K. G. Falk, New York.—p. 489.
*Origin of Urinary Ammonia. R. F. Loeb, D. W. Atchley and E. M. Benedict, New York.—p. 491.
*Animal Calorimetry. XXV. Relative Specific Dynamic Action of Various Proteins. D. Rapport, New York.—p. 497.
Id. XXVI. Interrelations Between Certain Amino Acids and Proteins with Reference to Specific Dynamic Action. R. Weiss and D. Rapport, New York.—p. 513.
Id. XXVII. Administration of Proteins with Benzoic Acid to Pig. F. A. Csonka, New York.—p. 545.
Id. XXVIII. Respiratory Metabolism of Young Pig as Influenced by Food and Benzoic Acid. D. Rapport, R. Weiss and F. A. Csonka, New York.—p. 583.
Nature of Blood Sugar. W. Denis and H. V. Hume, New Orleans.—p. 603.
Biologic Value of Proteins of Whole Wheat, Eggs and Pork. H. H. Mitchell and G. G. Carman, Urbana, Ill.—p. 613.
Changes in Serum Protein Structure of Rachitic Rats While Fed Cod Liver Oil. S. A. P. Ederer, Baltimore.—p. 621.
Fermentation of Pentoses by Bacillus Granulobacter Pectinovorum. W. H. Peterson, E. B. Fred and E. G. Schmidt, Madison, Wis.—p. 627.
Hydrogen Ion Concentration in Human Duodenum. H. V. Hume, W. Denis, D. N. Silverman and E. L. Irwin, New Orleans.—p. 633.

Nitrogenous Constituents of Juice of Alfalfa Plant. I. Amide and Amino Acid Nitrogen. H. B. Vickery, New Haven, Conn.—p. 647.
Relation of Acidosis and Hyperglucemia to Excretion of Acids, Bases and Sugar in Uranium Nephritis. B. M. Hendrix and M. Bodansky, Galveston, Tex.—p. 657.
Synthetic Lecithins. P. A. Levene and I. P. Rolf, New York.—p. 677.
Waldon Inversion. III. Oxidation of Optically Active Thiosuccinic Acid and Thiosuccinamide to Corresponding Sulfo Acids. P. A. Levene and L. A. Mikeska, New York.—p. 685.
Nucleosidases. I. General Properties. P. A. Levene, M. Yamagawa and I. Weber, New York.—p. 693.
Id. P. A. Levene and I. Weber, New York.
II. Purification of Enzyme.—p. 707.
III. Degree of Specificity and Distribution.—p. 717.
*Uric Acid Excretion. A. E. Koehler, Madison, Wis.—p. 721.
*Theory of Diabetes. IX. Sugar Excretion Curves in Dogs. H. V. Felsher and R. T. Woodyatt, Chicago.—p. 737.
Metabolism of Pyrimidines. H. J. Deuel, Jr., New Haven, Conn.—p. 749.
Rate of Glycolysis in Different Bloods; Diabetic Blood. F. A. Cajori and C. Y. Crouter, Philadelphia.—p. 765.

Analyzing Urine for Lead.—An entrainment reaction has been applied by Fairhall to the precipitation of lead from urine. Lead is quantitatively precipitated with the alkaline earth phosphates when ammonium hydroxide is added. This precipitate can be collected, ashed and the amount of lead present determined volumetrically with greater facility than by the usual method of evaporating the urine to dryness and ashing the residue.

Influence of Insulin on Glucose Fermenting Action of B. Coli.—It seemed possible to McGuire and Falk that the carbohydrate metabolism of bacteria might be influenced by insulin, but they found on experimentation that the fermentation of glucose by *Bacillus coli* was not influenced by insulin.

Origin of Urinary Ammonia.—The results of experiments by Loeb, Atchley and Benedict lend definite support to the theory that urinary ammonia is formed by the kidney.

Dynamic Action of Various Proteins.—Rapport states that six proteins of both animal and vegetable origin, namely, beef, casein, gliadin, codfish, chicken and gelatin, when given to a dog in portions each of which contained 6 gm. of nitrogen, showed approximately the same specific dynamic action. These proteins are of widely differing amino-acid content.

Uric Acid Excretion.—Investigation made by Koehler showed that uric acid ingested by mouth did not appreciably raise the blood uric acid level or increase its excretion in the urine. Only about one half of the uric acid injected intravenously can be recovered in the urine. The amount recoverable varies with different individuals. Uricolysis is assumed. The amount of uric acid retained in the blood two hours after injection and the rapidity of its elimination in the urine may be of value in determining renal insufficiency. Variability of destruction and errors in metabolism, as gout, must be taken into consideration in the interpretation of retention of injected uric acid.

Sugar Excretion Curves.—The results reported by Felsher and Woodyatt essentially confirm the conception that there is for any individual animal a certain maximum rate at which glucose may be introduced continuously into the systemic circulation without the occurrence of gross glycosuria and that when the rate is overstepped a sharp increase of the sugar output usually occurs. The ordinary qualitative tests for sugar in the urine, if not too refined, yield, as a rule, negative reactions before and almost invariably positive tests after the critical point has been reached.

Journal of Comparative Psychology, Baltimore

4: 225-348 (June) 1924

Effects of Emotional Stimuli on Gastro-Intestinal Tone. D. Brunswick, New York.—p. 225.
Moral Evaluations by Male and Female College Students. A. Snyder and K. Dunlap, New York.—p. 289.
*Factor in Etiology of Subbreathing Stammerer. Metabolism as Indicated by Urinary Creatin and Creatinin. L. D. Stratton, Philadelphia.—p. 325.
Brehm's Natural History of Animals. R. M. Yerkes.—p. 347.

Factor in Etiology of Subbreathing Stammerer.—It is believed by Stratton that in subbreathing stammerers, if the urinary creatinin coefficient is low, it may be concluded that an important factor in the etiology of the stammering is faulty metabolism and this must be corrected to effect a cure. The subject should have a constant creatinin coefficient of from 8 to 8.5 under conditions of lack of excitement; under exciting conditions the coefficient should rise. The creatinin coefficient may be increased in two ways: (*a*) much deep breathing and speech exercises; (*b*) by means of purging. The metabolism of the body as indicated by the creatinin coefficient is a very strong etiologic factor in this subbreathing stammerer.

Journal of General Physiology, Baltimore

6: 625-786 (July) 1924

Surface Tension of Serum. XI. Technic for Measuring. P. L. du Noüy, New York.—p. 625.
Similarities Between Curves of Growth and of Regeneration. S. Brody, Columbia, Mo.—p. 629.
*Effect of Ultraviolet Light on Parathyroids of Rabbits. J. H. B. Grant and F. L. Gates, New York.—p. 635.
Wave Length of Light and Photic Inhibition of Stereotropism in Tenebrio Larvae. W. J. Crozier, New Brunswick, N. J.—p. 647.
Effect of Glucokinin and Insulin on Growth of Maize Seedlings. W. H. Eyster and M. M. Ellis, Columbia, Mo.—p. 653.
*Effect of Ultraviolet, Roentgen Ray and Radium Radiation on Toxicity of Normal Blood. D. I. Macht and E. C. Hill, Baltimore.—p. 671.
Influence of Electrolytes on Pollen Tube Development. R. A. Brink, Madison, Wis.—p. 677.
Effect of Potassium on Acid Metabolism of Surviving Skeletal and Cardiac Muscles of Frog. F. R. Griffith, Jr., Buffalo.—p. 683.
Alkaline Isopotential Point of Bacterial Cell. C. E. A. Winslow and H. J. Shaughnessy, New Haven, Conn.—p. 697.
Relative Photosensory Effect of Polarized Light. W. J. Crozier and A. F. Mangelsdorf, New Brunswick, N. J.—p. 703.
Locomotion of Limax. I. Temperature Coefficient of Pedal Activity. W. J. Crozier and G. F. Pilz, New Brunswick, N. J.—p. 711.
Kinetics of Trypsin Digestion. V. Schutz's Rule. J. H. Northrop, New York.—p. 723.
Photochemistry of Visual Purple. III. Relation Between Intensity of Light and Rate of Bleaching of Visual Purple. S. Hecht, Boston.—p. 731.
Electric Conductivity of Disperse Systems. H. Fricke, Cleveland.—p. 741.
Solubility of Tyrosine in Acid and in Alkali. D. I. Hitchcock, New York.—p. 747.
Application of Diffusion Hypothesis to Membrane Potentials. C. D. Murray, New York.—p. 759.

Effect of Ultraviolet Light on Parathyroids.—A study has been made by Grant and Gates of the effects of radiation of normal rabbits with ultraviolet light on the weight and microscopic appearance of certain of the endocrine tissues. Among these tissues the external parathyroid glands showed a consistent reaction. The exposures caused an hypertrophy of the glands amounting in some instances to more than half the normal weight. The hypertrophy was a true hyperplasia of the parenchymatous tissue. It was not accompanied by any significant increase in the blood calcium above the normal level.

Effect of Various Radiations on Toxicity of Normal Blood.—The toxicity of normal blood for living plant protoplasm as studied by Macht and Hill on the growth of *Lupinus albus* seedlings is definitely influenced by various radiations. Ultraviolet rays produce no effect on normal blood or may even render it slightly less toxic. Roentgen rays render normal blood more toxic. The toxicity is greater in the case of the blood plasma as compared with the blood cells and a more toxic effect is produced with the Coolidge tube as compared with the gas tube. Radium emanations in the few experiments performed produced changes very much the same as those given by the roentgen rays.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

23: 395-502 (July) 1924

*Action of Quinin on Protein Metabolism, Respiratory Exchange and Heat Function. I. Protein Metabolism. S. W. Hardikar, Edinburgh, Scotland.—p. 395.
Chronic Intoxications on Albino Rats. VII. Local Anesthetics; Morphine Group; Chloral. T. Sollmann, Cleveland.—p. 449.
*Excretion of Tryparsamide. A. G. Young and C. W. Muehlberger, Madison, Wis.—p. 461.
*Renal Toleration of Caffein. H. B. Myers, Portland, Ore.—p. 465.
*Cross Tolerance: Decreased Renal Response to Theobromin and Theophyllin in Rabbits Tolerant Toward Caffein. H. B. Myers, Portland, Ore.—p. 477.
*Experiments with Propylene, Methane and Dimethyl-Ether. W. E. Brown, Toronto.—p. 485.

Action of Quinin on Protein Metabolism.—Experiments made by Hardikar lead to the conclusion that quinin in ordinary doses in the normal human subject (1.2 gm. per day) and in doses going up to about 50 gm. per kilogram in healthy animals (rabbits and dogs) has no influence on the nitrogen metabolism.

Excretion of Tryparsamide.—Observations made by Young and Muehlberger show that at least part of tryparsamide is excreted unchanged in the urine. Three out of four persons studied excreted from 88 to 95 per cent. of the drug within the first twenty-four hours. Certain subjects show a much slower rate of excretion. These individuals retain the arsenic over a much longer period of time and, therefore, may be more susceptible to cumulative effects of the drug. In such cases, it might be advisable to increase the interval between the repeated medication beyond the usual weekly period.

Renal Toleration of Caffein.—The development of a decreased susceptibility to the diuretic action of caffein has been shown by Myers to occur in rabbits, requiring approximately four months for maximal development with large daily doses. The caffein tolerant rabbits remain in the best of health, apparently, with this large dose of caffein over periods of twelve or more months. The renal response of the rabbits exhibiting a maximal tolerance toward caffein was as sensitive toward minimal effective diuretic doses of sodium acetate as those responses obtained from the kidneys of control rabbits. The urine of rabbits tolerant toward caffein showed no pathologic constituents during the development of toleration or during its maintenance at maximal level. Macroscopic and microscopic examination of the kidneys of caffein tolerant rabbits showed no particular pathology ascribable to the action of caffein.

Cross Tolerance to Drugs.—Myers found that rabbits tolerant toward the action of caffein exhibit a decreased response toward the diuretic action of theobromin and theophyllin.

Propylene, Methane and Dimethyl Ether.—Experiments were made by Brown on propylene, methane and dimethyl ether. Propylene possesses definite anesthetic properties. It will induce anesthesia in concentration as low as 37 per cent. using either oxygen or air with it. Anesthesia may be maintained satisfactorily in concentrations varying from 31 to 20 per cent. using either oxygen or air. It is slowly poisonous when used in concentrations of about 65 per cent. and produces poisonous symptoms in two minutes when used in concentrations of over 70 per cent. It is not unpleasant to inhale. The recovery is quite rapid and there are no unpleasant after effects. It produces no marked effects on the blood pressure when not used in poisonous concentrations. Propylene has been inhaled in the laboratory in concentration of 50 per cent. which induces anesthesia in about two minutes. Methane will produce anesthesia but only in high concentrations; 85 per cent. would not abolish response to electrical stimulation; 87 per cent. apparently gave anesthesia; 90 per cent. methane caused irregular respirations which gradually ceased. These figures show that the difference between anesthetic and poisonous doses is very slight. Dimethyl ether produces anesthesia in concentrations of 65 per cent.; 85 per cent. causes profound anesthesia with gradual cessation of respirations. Approximately twenty minutes were necessary for complete recovery after fifty minutes anesthesia. Dimethyl ether has been inhaled in the laboratory in concentrations up to 50 per cent. It is most unpleasant to take.

Journal of Radiology, Omaha

5: 221-260 (July) 1924

Biophysic and Chemical Properties of Malignant Cell Metabolism; Combative Therapeutic Measures. D. C. A. Butts, Philadelphia.—p. 221.
Treatment of Malignancies by Surgical Diathermy and Roentgen Ray. A. L. Yocom, Jr., Chariton, Iowa.—p. 228.
Interpretation of Dental Roentgenographic Shadow Changes. W. A. Lurie, New Orleans.—p. 231.
Roentgenologic Diagnosis in Diseases of Alimentary Tract. N. J. Nessa, Sioux Falls, S. D.—p. 232.
Roentgen Ray in Diagnosis. J. M. Willis, McCook, Neb.—p. 235.
Treatment of Pulmonary Tuberculosis by Ultraviolet Ray. W. B. Chapman, Carthage, Mo.—p. 237.
New Device for Charging Electroscopes and Iontoquantimeters. M. Brenzinger, Frankfort on the Main, Germany.—p. 241.
Causes of Failure with Autocondensation in Hypertension. B. L. Knight, Cedar Rapids, Ia.—p. 242.

Laryngoscope, St. Louis

34: 497-592 (July) 1924

Appearance and Behavior of Normal Tympanic Membrane. G. W. Mackenzie, Philadelphia.—p. 497.
Otitic Brain Abscess. S. M. Smith, Philadelphia.—p. 534.
Roentgenography of Nasal Accessory Sinuses. M. Maltz, New York.—p. 550.
Ophthalmic Migraine. G. Sluder, St. Louis.—p. 570.

Maine Medical Association Journal, Portland

14: 251-272 (July) 1924

Intraspinal Therapy of Neurosyphilis. R. B. Josselyn, Portland.—p. 256.

Northwest Medicine, Seattle

23: 305-356 (July) 1924

State Medical Society. E. B. McDaniel, Portland.—p. 305.
Diagnosis and Treatment of Brain Injuries. W. Sharpe, New York.—p. 308.
*Botulism in Oregon. F. D. Stricker, W. Levin and R. L. Benson, Portland.—p. 316.
Surgery Forty-Five Years Ago and Now. W. Kuykendall, Eugene, Ore.—p. 324.
Restrospection and Introspection After Forty Years. J. A. Fulton, Astoria, Ore.—p. 328.
Economic Side of Preventive Medicine. C. J. Smith, Portland.—p. 330.
Medical Study in Europe. N. W. Jones, Portland.—p. 332.

Botulism in Oregon.—Stricker, Levin and Benson state that the spores of *Clostridium botulinum* have been found in 31 per cent. of the soils examined from Oregon, 80 per cent. from Washington and 29 per cent. from California. The Albany outbreak which occurred in February, 1924, was one of the largest that has ever occurred in this country. Every person (twelve) who ate at this meal suffered death from the virulent toxin that was present in a jar of string beans. The history of this outbreak from a preventive standpoint emphasizes the fact that a great deal of care must be exercised in canning methods. The soil of the garden in which these beans had been grown was found to contain *C. botulinum*, Type A.

Philippine Journal of Science, Manila

24: 369-507 (April) 1924

Biochemical Study of Resistance to Mildew in Oenothera. J. M. Maranon.—p. 369.
*Chemotherapeutic Experiments with Chaulmoogra and Allied Preparations. III. Disinfecting Power of Vapors of Vegetable Oils Toward Acid-Fast Bacteria. O. Schöbl and H. Kusama.—p. 443.
*Monilia Psilosis Ashford in Severe Anemia Associated with Sprue Syndrome. L. W. Smith.—p. 447.
Hydroids of Philippine Islands. C. W. Hargitt.—p. 467.

Disinfecting Power of Vegetable Oils.—Having demonstrated the growth-inhibiting effect on acid-fast bacteria of certain vegetable oils, Schöbl and Kusama attempted to ascertain to what extent, if at all, these oils contribute to the natural disinfection of objects exposed to the atmosphere, which is filled with their volatile constituents or secondary products. The vapors of chaulmoogra and Hydnocarpus oils showed no disinfecting effect on acid-fast bacteria. The volatile constituents of certain essential oils showed a high disinfecting activity with a strong indication of selectivity toward acid-fast bacteria.

Monilia Anemia Associated with Sprue Syndrome.—Eight cases of severe anemia associated with the sprue syndrome are presented by Smith with their laboratory findings. The isolation of *Monilia psilosis* Ashford, 1914, from these cases is described, which is the first time it has been reported from the Philippine Islands. The specific nature of the complement fixation in sprue, using a watery extract of *Monilia psilosis* as antigen, is discussed. The histopathology of the peripheral blood is described and on the basis of the blood picture a tentative classification of this anemia as aplastic is suggested.

Public Health Journal, Toronto

15: 291-340 (July) 1924

Diphtheria. J. G. Fitzgerald.—p. 291.
Problems of Rural Communities. J. J. Middleton.—p. 305.
Social Hygiene. G. Bates.—p. 310.

Revista Filipina de Medicina y Farmacia, Manila

15: 84-112 (April) 1924

Hospital Service in Philippines (1901-1924). S. Y. Orosa.—p. 85.

South Carolina Medical Association Journal, Greenville

20: 157-188 (July) 1924

Psychoneuroses. E. L. Horger, Columbia.—p. 159.
Gynecologic Contributions to Obstetric Difficulties. G. T. Tyler, Greenville.—p. 165.
Surgery in Diabetes Mellitus. R. L. Sanders and J. P. Henry.—p. 169.

Surgery, Gynecology and Obstetrics, Chicago

39: 147-258 (Aug.) 1924

*Chyluria: Case Treated with Neo-Arsphenamin. W. E. Lower and G. W. Belcher, Cleveland.—p. 147.
*Hematuria: 821 Consecutive Cases. D. W. MacKenzie, Montreal.—p. 155.
Congenital Diverticulum of Common Bile Duct. H. W. S. Wright, Tsinanfu, North China.—p. 156.
*Tuberculous Cyst of Spleen: Splenectomy: Recovery. C. H. Peck, New York.—p. 162.
Infections of Hand. J. H. Garlock, New York.—p. 165.
*Vascular Tumors of Intestine. A. J. Brown, Omaha.—p. 191.
*Preoperative Preparation of Patients with Obstructive Jaundice. W. Walters and J. P. Bowler, Rochester, Minn.—p. 200.
*Childbearing After Radium and Roentgen-Ray Treatment. F. A. Pemberton, Boston.—p. 207.
*Cervical Sympathectomy for Relief of Pain. F. J. Smith and R. D. McClure, Detroit.—p. 210.
*Benign Tumors of Placenta. R. A. Scott, Evanston, Ill.—p. 216.
Some Problems of Drainage. H. M. W. Gray, Montreal.—p. 221.
*Repeated Venesection Blood Transfusion in Anuria. C. A. Bowers and H. R. Trattner, Cleveland.—p. 229.
*Loose Body in Knee Joint Demonstrated by Pneumarthrosis. I. Balensweig, New York.—p. 235.
*Insulin Treatment of Toxemic Vomiting of Pregnancy. W. Thalhimer, Milwaukee.—p. 237.
Wrist Under Chin Cause of Deflection. Manual Rotation in Deep Transverse Arrest. G. E. Barnes, Herkimer, N. Y.—p. 240.

Neo-Arsphenamin for Chyluria.—Lower and Belcher's case of chyluria was of left renal origin. Searches for parasites were negative, in spite of the fact that the patient was Chinese and had an eosinophilia of from 5 to 7 per cent. Posture had no effect on the condition. Diet caused little change. Increasing the fat intake did not increase the fat output. A fat-free diet lowered the output a little. The differential phenolsulphonephthalein test showed a normal left kidney (chyluria side). The pyelogram did not show a pathologic condition. Neo-arsphenamin was directly followed in a few days by complete disappearance of fat, as well as red blood cells, from the urine. The patient remained fat-free and showed no hematuria when last seen one and two-thirds months later, although the eosinophilia had persisted.

Hematuria.—Of the 821 cases of hematuria analyzed by MacKenzie, pyelitis was the cause in 132 cases; kidney tuberculosis in 88 and kidney calculus in 64; ureteral calculus in 87; cystitis in 38; vesical calculus in 38; tumor of bladder in 87; chronic inflammation of prostate with tuberculosis in 39; prostatism in 54. In 60 cases the blood came from the urethra. Excluding the urethra, 536 cases out of 761, that is over 70 per cent., were caused by calculi, tuberculosis, cancer or surgical lesions of the kidney. The great importance of subjecting these patients to a careful and thorough examination is emphasized.

Tuberculous Cyst of Spleen.—Peck's case apparently was one of primary tuberculosis of the spleen. No evidence of tuberculosis could be found elsewhere in the body. The spleen was removed. Its dimensions were 29 by 18½ by 15 cm. Its weight was 3,270 gm. (16 pounds, 13 ounces) after the loss of the semifluid content of the upper locule of the cyst. Only three cases of equal or larger size have been reported, all being necropsy, not operative cases.

Vascular Tumors of Intestine.—Brown has found recorded in the literature nineteen cases of vascular tumor of the intestinal tract below the stomach. These include all forms of vascular tumor varying from capillary nevi to cavernous angioma. Brief abstracts of the cases are given. He adds one case. The patient was a girl, aged 12. From the examinations and findings a diagnosis of either fulminating appendicitis or intestinal obstruction was made and immediate operation advised. Lying deep in the pelvis was a tumor that felt like a bag of worms. It was found to be in the jejunum. Eight inches of bowel containing the tumor was resected and an end-to-end anastomosis performed. Following operation acute gastric dilatation supervened, vomiting continued and death occurred two days later. A necropsy was refused. The tumor was 5 inches in length, annular in form, and involved the entire circumference of the intestine. The dilated blood spaces of which the tumor was composed were raised from the surface of the bowel and were of a dusky violet color. The margins were rather sharply demarcated and raised above the surface. The finger introduced into the lumen of the bowel met a constriction which would not admit the tip of the finger and the intestine above this constriction contained almost entirely undigested food. When the bowel was split longitudinally the constriction was found to be due to a collection of fibrous tissue around the dilated sinuses at the thickest portion of the tumor. On section the tumor consisted of irregular sinuses lined with endothelial cells and containing large numbers of red blood cells. Histologically the tumor was a cavernous hemangioma.

Preoperative Preparation of Jaundice Patients.—An experimental study was made by Walters and Bowler of the toxicity of calcium chlorid used in the preparation of patients. They found that calcium chlorid, following its intravenous injection in a 10 per cent. aqueous solution, is rapidly eliminated from the blood stream and shows no tendency to accumulate in the blood. Following therapeutic doses, as used in these experiments, the blood calcium content returns to its normal level within two hours. The lethal dose of calcium chlorid, administered intravenously in 10 per cent. aqueous solution, at a uniform rate of 1 c.c. per minute, was 256.4 mg. for each kilogram of body weight in normal dogs; and in jaundiced dogs, 386.6 mg. for each kilogram of body weight. Following continued injections of calcium chlorid, including therapeutic doses, in normal and jaundiced dogs, no evidence of toxic effect on the kidney could be demonstrated, clinically or microscopically. The cardiac effect of therapeutic doses of calcium chlorid, as used in this study, is the production of various alterations in pulse rate. Toxic doses cause disturbances of conduction, ectopic origins of impulse, and when carried to the point of greater toxicity, ventricular fibrillation which is followed by the death of the animal.

Pregnancy After Irradiation.—Pemberton is of the opinion that a woman can be treated with radium or roentgen ray and bear normal children subsequently.

Cervical Sympathectomy for Angina Pectoris.—Smith and McClure report two cases in which a cervical sympathectomy was done for angina pectoris. In one of the cases the operation was done on both sides. Both patients had considerable relief from pain after the operation, as to the number and severity of the attacks. The authors stress the fact that while in many cases the resection of the cervical sympathetic in angina pectoris, unilateral or bilateral, may greatly lessen the number and minimize the intensity of the painful attacks, it must not be counted on to secure complete relief from pain, unless the first thoracic ganglion is included in the resection. The resection should be done first on the side which has shown the greatest or most severe radiation of pain, and followed later by a similar operation on the other side, if complete relief is not obtained after the first one.

Benign Tumors of Placenta.—Scott reviews the literature and reports one case of chorio-angioma of the placenta. The pregnancy and labor were wholly normal.

Venesection Blood Transfusion in Anuria.—Bowers and Trattner report the use of an additional surgical method, the combination of repeated venesections and transfusion in a case of acute nephritis with anuria. In addition to decapsulation of the right kidney (which was unsuccessful in producing any immediate beneficial effects), the patient was bled 500 c.c., and was then immediately transfused with an equivalent amount of blood from a healthy donor. The criteria that determined the frequency of this procedure were based on the clinical condition of the patient, the blood chemistry findings, and the amount of urine excreted in twenty-four hours. It was found necessary to use four venesection transfusions.

Pneumarthrosis Aid in Diagnosis.—Injecting oxygen into the knee joint was a distinct aid in both localizing and differentiating the loose body from the surrounding tissues in the case cited by Balensweig.

Insulin in Toxemic Vomiting of Pregnancy.—Eight patients with pernicious vomiting of pregnancy have been successfully treated by Thalhimer with insulin combined with the intravenous administration of glucose. Five of these cases have been reported previously. The report of the three additional cases is published here. All of these patients showed a marked ketonuria and one of them was proved to have a moderately severe acidosis, as indicated by a carbon dioxid combining power of the blood plasma of 35. Three hours later at the end of the intravenous infusion of glucose and the administration of insulin, the blood plasma carbon dioxid combining power was 48, and nineteen hours later it was 69. The rapid eradication of ketonuria, and even of acidosis, by combined insulin and glucose therapy seems to cause relief of the nausea and vomiting in nondiabetic patients. A vicious cycle of acidosis causing vomiting, and the starvation following the vomiting causing further acidosis of a starvation type, seems to establish itself in these patients. Insulin helps break this cycle by forcing the body to oxidize the administered glucose, which in turn causes the burning of the products of incomplete fat metabolism (acetone, aceto-acetic acid, beta-oxybutyric acid). This reduces or eliminates the ketonuria; the lowered blood plasma carbon dioxid combining power is raised, and this removal of the acidosis eradicates the chief cause of the severe nausea and vomiting. Food is then retained, and with a proper diet, rich in carbohydrates, nausea and vomiting (except to a slight degree in the morning) usually do not return.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Anaesthesia, Manchester

1: 101-148 (Jan.) 1924

John Snow and Advent of Chloroform. D. W. Buxton.—p. 101.
Experiments with Hydrocarbon Gases. J. T. Gwathmey.—p. 108.
Endotracheal Administration of Nitrous Oxid-Oxygen-Ethanesal. C. L. Hewer.—p. 113.
Advantages of Warm Ether Vapor. F. E. Shipway.—p. 123.

2: 1-52 (July) 1924

Joseph Lister and Paul Bert: Dosimetric Method of Administering Chloroform. D. W. Buxton.—p. 1.
Anesthesia at Mayo Clinic. W. R. Meeker and M. Hines.—p. 13.
Blood Concentration and Body Temperature in Anesthesia. W. Bourne. —p. 36.

British Medical Journal, London

2: 1-40 (July 5) 1924

Essential Signs of Arteriosclerotic Disease. G. Evans.—p. 1.
Medical Practice. W. J. Tyson.—p. 4.
*Use of Lipiodol in Diagnosis of Bronchiectasis. P. F. Armand-Delille and Alan Moncrieff.—p. 7.
Effect of Boron on Plant Growth. W. E. Brenchley.—p. 9.
Blinded Soldier Learning to See. R. H. Elliot.—p. 10.
*Influence of Sunlight on Bactericidal Power of Human Blood. L. Colebrook.—p. 11.
*Postanesthetic Vomiting: Prevention. E. H. P. Cave and H. C. Edwards.—p. 11.
Spasmodic Asthma from Feathers. S. D. Kilner.—p. 12.
Gallstone Enterclith. A. A. M. Nicol.—p. 12.
Diabetic Gangrene Treated by Insulin. W. H. DuPré.—p. 12.
Myoclonic Encephalitis Treated by Patient's Spinal Fluid. S. E. Denyer. —p. 13.
Stabwound of Heart: Suture: Recovery. J. T. Blackburn.—p. 13.

Use of Lipiodol in Roentgen-Ray Diagnosis of Bronchiectasis.—By injecting lipiodol into the bronchi before employing the roentgen rays, a clear picture of the bronchi is obtained, bronchial dilatation of even slight degree is definitely shown, and localization of vague shadows becomes very much simplified. Lipiodol, a vegetable oil containing 40 per cent. by weight of iodin, was first introduced into radiology by Sicard, for the localization of tumors of the spinal cord, and Forestier, who suggested that it might be used for the diagnosis of bronchopulmonary affections. It was later employed for this purpose in adults by Sergent and Cottenot. Lipiodol has been used extensively by Armand-Delille and Moncrieff in the case of children clinically supposed to be suffering from pulmonary tuberculosis in whom the diagnosis was not confirmed by other means. Cases of frank tuberculosis should not be submitted to this method, for the congestive action of the iodin may produce harmful effects, and even in doubtful cases an ordinary radiograph may clearly indicate a diagnosis. The lipiodol is injected into the trachea through the cricothyroid membrane under local anesthesia. Special tubes and syringes are used. About 10 c.c. is needed to inject the bronchi of a child, aged from 7 to 10 years. The roentgenogram is taken immediately after the injection is made. Details of the method are given fully.

Influence of Sunlight on Bactericidal Power of Blood.—Observations made by Colebrook have shown that leukocytes which are functioning badly are easily harmed by the action of light on the skin, while those which are functioning well are tolerant of large doses and respond to them by displaying a still greater activity.

Prevention of Postanesthetic Vomiting.—Cave and Edwards attempted to eliminate the nausea and vomiting which so frequently follow operations under general anesthesia by the administration of some pleasantly flavored substance during the final stages of the operation. The substances used were oils of cloves, peppermint and lavender, all of which have a high molecular weight and are absorbed but little. Acetic acid was also tried in some cases after ether, the interaction of the two producing the sweet smelling ethyl acetate. The methods of administration were either inhalation through an open mask, or swabbing out the mouth with a few drops on a sponge. No claims are made in favor of the method. The cases of severe nausea and vomiting seemed to be reduced when acetic acid and oil of cloves were used, but the number of cases is too small to draw definite conclusions.

China Medical Journal, Shanghai

38: 437-532 (June) 1924

Spleen and Blood Cells. R. H. Mole.—p. 452.
*Occurrence of Tenia Solium and Cysticercus Cellulosae in North China. R. G. Mills.—p. 465.
Congenital Hypertrophic Pyloric Stenosis. E. D. Smith.—p. 471.
Leukocytosis of Puerperium Among Chinese. J. P. Maxwell and M. Yang.—p. 477.
*Intermediate Host of Schistosoma Japonicum. III. Distribution. H. E. Meleney.—p. 481.
*Congenital Abnormality: Report of Case. E. K. Simpson.—p. 486.
Case of Pseudohermaphroditism. A. W. Hooker.—p. 487.

Cysticercus in Pectoral Muscle.—Mills reports a case of *Cysticercus cellulosae* infestation in the right pectoralis major muscle of a man. The life span of the larval stage in this case of human infestation was at least twelve years.

Intermediate Host of Schistosomiasis.—Investigation of various localities in the central Yangtze Valley has revealed the presence of *Oncomelania hupensis* on the shore of Tung T'ing Lake, in the region of Hankow, at Anking and at Pukow. It was nearly everywhere closely associated with clinical cases of schistosomiasis. Each locality was found to have epidemiologic features of its own. Meleney states that the seed bed in which rice is sown is often the place where the farmers acquire schistosomiasis and may be the most important source of infection in this occupation. Comment is made on the variation in size and density of the shell of the intermediate host of *Schistosoma japonicum* from one end of its Asiatic habitat to the other. Those from the upper part of the Yangtze Valley have the largest and hardest shell, while those from Japan are smaller and have the softest shell. There is a progressive gradation in specimens from intermediate localities.

Parasitic Monster.—The sexual organs and anus of the child reported on by Simpson were normally placed and he was apparently normal in every way except for the supernumerary development of an acephalous upper part of a trunk with a pair of hands. The boy could stand and pick up things from the ground with his supernumerary hand and pass them to his normal hand without bending his spine. He came for treatment of a cold abscess which pointed where the second head should have been. The abscess was opened under local anesthesia and 20 ounces of pus removed.

Edinburgh Medical Journal

31: 341-372 (June) 1924

*Scarlatinal Arthritis. A. Joe.—p. 341.
Attitude of Medical Profession to Scientific Problems. H. T. Thomson. —p. 350.
Acute Osteomyelitis of Spine. K. P. Brown.—p. 360.

Scarlatinal Arthritis.—Forty-nine personal cases and the records of 24,012 hospital cases of scarlet fever were analyzed by Joe with reference to the occurrence of scarlatinal arthritis. The percentage incidence was 3.76 per cent. The liability to contract scarlatinal arthritis increases with age in both sexes. An interesting point is that out of 777 children of both sexes developing scarlet fever before the end of their second year, not one showed arthritis. With regard to the commonest time of appearance of the complication, no case appeared before the second day of the fever and a small percentage on the second and third days. The seventh and sixth days were the favorite days for the appearance of scarlatinal arthritis, 14.1 per cent. and 14 per cent. of the total number occurring on these days. Next in frequency were the fifth day with 10.7 per cent., the eighth with 8.08 per cent., the ninth with 8.01 per cent., and the fouth with 7.4 per cent. From the fourth to the ninth day, inclusive, therefore, 62.29 per cent. of all cases occurred. About one patient in 250 might be expected to develop arthritis after the fourth week. An attempt was made to find out if there was any connection between the incidence of any other complication or group of complications of scarlet fever and arthritis by comparing two series of 408 cases, all of one series showing arthritis, and none of the other showing arthritis. The first point noted was that 63.2 per cent. of the arthritis cases showed arthritis as the sole complication. The only concomitant complications promising a relationship with arthritis were adenitis, rhinitis and otorrhea. Adenitis, either alone or in conjunction with other complications, except arthritis, was present in 18.06 per cent. of the series. In the presence of arthritis, however, it appears in 27.2 per cent. of cases of scarlet fever. Endocarditis, pericarditis, or both occurred sixty-one times in 24,012 cases, and of these sixty-one cases, twenty-six were associated with arthritis. The septic type of scarlatina shows an incidence of arthritis of 8.54 per cent. In 207 cases of relapsed scarlet fever arthritis occurred in 4.35 per cent. of cases.

Glasgow Medical Journal

101: 325-384 (June) 1924

Treatment of Syphilis. W. R. Snodgrass.—p. 325.
Present Position of Anesthesia. H. P. Fairlie.—p. 339.
*Stone in Urethra for Twenty-Three Years. W. W. Galbraith.—p. 344.
*Case of Ulcerative Endocarditis Terminating in Appearance of Widespread Embolic Phenomena. A. M. Crawford.—p. 346.

Urethral Calculus.—In Galbraith's case a calculus measuring 1¼ inch long and ¾ inch wide was embedded in the navicular fossa, with its tip projecting through the external urethral meatus, for twenty-three years without causing any real inconvenience. It was eventually passed spontaneously.

Ulcerative Endocarditis with Extensive Embolism.—Loss of power in the right arm and leg of four days' duration brought Crawford's patient to the hospital. For several days before admission he had complained of vague pains in the limbs and of weakness in the legs. Four days before, he suddenly fell down unconscious. He remained in a semiconscious condition, with right sided paralysis and complete incontinence of urine and feces. A diagnosis was made of mitral stenosis with left sided cerebral embolism, producing aphasia and right hemiplegia. His condition improved for a while; then, after three months, he suddenly became very ill, with signs of gangrene apparent in the legs, the tip of the nose, the alae nasi and both cheeks over the malar bones. A patch of ecchymosis appeared over the left buttock, and purpuric spots were visible over the left upper arm and vertex of the skull. The affected parts generally were cold and pulseless. Some tenderness was noted over the left popliteal region. Death was preceded by a condition of semistupor with mild delirium and some extension of the gangrenous areas. The necropsy revealed a widespread endocarditis affecting the aortic and mitral valves. There was a small hemorrhagic infarction in the left lung. The spleen was normal in size, but showed a large number of small infarctions and three large infarctions. Both kidneys showed one or two small infarctions. The brain showed a softening of some duration involving the anterior and upper end of the caudate nucleus, extending outward to the island of Reil and inward to the anterior knee of the internal capsule. An embolus was found blocking the right radial artery at its commencement. The subcutaneous tissue over both cheeks was extensively infiltrated with blood. The right leg was gangrenous from the knee downward, and the left knee and foot also showed gengrenous changes.

Indian Medical Gazette, Calcutta

59: 273-324 (June) 1924

Antimalaria Measures in United Provinces. J. A. S. Phillips.—p. 273.
Individual Susceptibility. H. W. Acton and R. N. Chopra.—p. 278.
Effect of Enteric Vaccine on Endemic Goiter in Children. M. A. Nicholson.—p. 289.
Transient Infections with Leishmania Donovani. R. Knowles and B. M. D. Gupta.—p. 292.
Injuries from Firearms at Short Range. C. Newcomb.—p. 295.
*Intestinal Coleoptera. T. B. Fletcher.—p. 296.
Is Leprosy Curable? E. Muir.—p. 297.

Beetles in Intestine.—The occurrence of a pathologic condition associated with the presence of living beetles in the human intestine has attracted the attention of several observers of late years, both in Bengal and in the low country of Ceylon. Cases occur principally in children of both sexes between the ages of three and five years, with symptoms pointing to an obscure form of diarrhea, sometimes associated with griping and emaciation. The living beetles may be passed out nautrally with the stools, but in several cases they have been passed out under medical observation following a rectal injection. These beetles so far as they have been observed hitherto, are all small species of the true dung-beetles belonging to the subfamily Coprinae of the family Scarabaeidae. Those definitely noted are *Onthophagus bifasciatus*, another undetermined species of *Onthophagus*, and *Caccobius mutans*. All of these beetles, with the other species of the large group of Coprinae, feed normally on dead animal matter and especially on animal excrement. The beetles implicated in cases of human infection being of common occurrence in human excrement, after it has been evacuated, it still remains to be shown how the beetles can obtain access into the human intestines. It seems most probable to Fletcher that the adult beetles, guided by their keen sense of smell in the search for human ordure, themselves effect an entrance through the anus, when this part of the body is exposed, unprotected by clothing, during sleep in warm weather and is probably soiled to some extent, especially in the case of young children who have not yet learned cleanly habits.

Indian Medical Record, Calcutta

43: 161-192 (June) 1924

Case of Raynaud's Disease. S. L. Sarkar and S. N. Maitra.—p. 161.
Medicolegal Responsibilities in Cases of Poisoning. T. P. Chatterji.—p. 163.
Protein Sensitization and Desensitization. A. Ray.—p. 166.
Minor Endocrine Glands. S. K. Mukherji.—p. 175.

Japan Medical World, Tokyo

4: 111-134 (May) 1924

*Serologic Studies of Experimental Protozoan Disease. K. Taoka.—p. 111.
*Roentgen Rays on Liver or Spleen to Stop Hemorrhage. T. Shichida.—p. 115.
Growth of Oxyuris Vermicularis. S. Hiraishi.—p. 118.

4: 117-147 (June 15) 1924

Biologic Function of Constituents of Dead Cells. Y. Miyagawa.—p. 117.
Typical Korean Diets. J. D. Vanbuskirk.—p. 127.

Serologic Studies of Protozoan Disease.—Taoka claims to have found that an unknown substance is formed in trypanosomiasis and two substances in rat bite fever probably due to the protozoan cause.

Roentgen Rays Over Liver to Prevent Hemorrhage.—Experimental evidence is submitted by Shichida to prove that the application of roentgen rays over the liver is one of the best methods to stop bleeding. He suggests that before operating on a patient with a hemorrhagic diathesis, the roentgen ray be applied over the liver for five or ten hours to avoid bleeding during and after the operation.

Journal of Tropical Medicine and Hygiene, London

27: 187-198 (July 1) 1924

Malaria Work in Buruluk Oeyezd. E. M. Christie.—p. 187.
Therapeutic Ventilation. J. R. Quain.—p. 190.

Lancet, London

2: 53-100 (July 12) 1924

*Diagnosis of Diphtheria. F. F. Caiger and R. A. O'Brien.—p. 53.
*Oxidized Cod Liver Oil in Therapy of Rickets. R. Wagner and H. Wimberger.—p. 55.
Flocculation Methods of Dreyer-Ward and Sachs-Georgi. I. R. Mörch.—p. 58.
Prophylactic Method of Treatment of Eclampsia. B. B. Streganoff.—p. 62.
*Anesthesia for Short Operations on Children. O. S. Thompson.—p. 63.
Epidemic Pleurisy. B. Williamson.—p. 64.
Rupture of Rectus Abdominis from Vomiting. J. Whittingdale.—p. 65.
Growth of Mammalian Tissues in Pure Serum. T. Lumsden.—p. 65.

Diagnosis of Diphtheria.—An investigation was made by Caiger and O'Brien to see if laboratory methods, applied as thoroughly as possible to every case admitted with a diagnosis of diphtheria into an infectious fever hospital, would be helpful. In other words, would the extra time and trouble involved in such work give any real help in the interests of the patient, and in the interests of hospital administration. The laboratory workers' diagnosis agreed with the clinical diagnosis in 97.5 per cent. of instances; in eleven cases (2.5 per cent.) the laboratory evidence was directly against a diagnosis of diphtheria, while the clinical evidence was quite definitely in favor. The first swab examination at the laboratory was found to be positive in 95.5 per cent. of instances in which the diagnosis of diphtheria was confirmed. From 93.5 per cent. virulent diphtheria organisms were isolated. In only 1.15 per cent. was a negative diagnosis which had been made from the first swab changed into a positive diagnosis by the examination of later swabs. Two cases only were diagnosed as "nasal diphtheria," but from neither was *Bacillus diphtheriae* isolated.

Oxidized Cod Liver Oil in Rickets.—Four cases of active rickets in infants, aged from 5 to 12 months, were treated by Wagner and Wimberger with oxidized cod liver oil (heated for twenty-four hours at 120 C. with air bubbled through). The daily dose was 10 gm. and the cases, carefully controlled with regular roentgen-ray examination, showed satisfactory healing of the bone lesions at a rate rather slowler than with the same dose of a potent, crude, untreated cod liver oil. The growth-promoting potency of the two samples of oil, tested by growth experiments on rats, was found to be in the ratio of about 1:20. Assuming that a daily dose of 10 gm. untreated cod liver oil, when used in therapy of rickets, does not provide any great excess of antirachitic principle, these observations lend support to the view that cod liver oil contains two active organic factors: (1) antirachitic or calcium depositing, and (2) growth promoting (vitamin A), and that the latter is the more sensitive to oxidation at a high temperature.

Ethyl Chlorid Anesthesia for Children.—In a series of 10,000 administrations of ethyl chlorid no bad effects were noticed. On the strength of this, Thompson used ethyl chlorid followed by open ether in a series of 200 cases in the outpatient department without observing any ill effects or alarming symptoms or having any difficulty in the administration. He gives ethyl chlorid on an open mask, the amount used being about 3 c.c. for a child of 5 years. It is sprayed on the mask, which is immediately applied over the face and is followed by open ether later on. The child is instructed to blow it away, and four "blows" with the inspirations that accompany them are usually sufficient to produce loss of consciousness. The child seldom struggles.

Medical Journal of Australia, Syndey

1: 555-580 (June 7) 1924

*Internal and External Migration of Ovum. H. H. Schlink.—p. 555.
*Chronic Diseases of Cervix Uteri. H. H. Schlink.—p. 560.
Case of Hysteria. C. A. Hogg and E. T. Hilliard.—p. 567.

SUPPLEMENT

Martyrdom of Nose. R. H. Pulleine.—p. 385.
Suppurative Disease of Mastoid Antrum. S. A. Ewing.—p. 386.
Mastoid Drainage in Otitis Media. B. Foster.—p. 388.
Evolution of Language Mechanism. S. V. Sewell.—p. 390.
Diagnosis in Lethargic Encephalitis. D. W. C. Jones.—p. 392.
Relation of Cerebral Structure and Function to Feeblemindedness. R. J. A. Berry.—p. 393.
Prevention of Mental Deficiency. R. Noble.—p. 400.
Care of Feebleminded in Great Britain. J. Macpherson.—p. 403.
Prevention of Feeblemindedness. M. H. Downey.—p. 405.

1: 607-628 (June 21) 1924

Radium Therapeutics. C. E. Dennis.—p. 607.
Radium Emanation. H. Flecker.—p. 610.
Radium Therapy. R. R. Wettenhall.—p. 612.
Pellagra: Case. C. E. Corlette.—p. 613.

SUPPLEMENT

Vertigo. A. E. Mills.—p. 433.
Psychology of Criminal. P. G. Dane.—p. 437.
Relationship Between Psychologic Processes and Physiologic Reflex Mechanisms. H. F. Maudsley.—p. 440.
Psychiatric Clinic. M. Gamble.—p. 443.
Stammering and Influence on Education. T. G. Leary.—p. 445.
Psychotherapy in Practice. J. W. Springthorpe.—p. 448.
"Muscle-Pressure Sense" in Neurologic Diagnosis. D. W. C. Jones.—p. 451.
Twelve Cases of Insanity in Australian Aboriginals. C. A. Hogg.—p. 455.

Internal and External Migration of Ovum.—Schlink points out the great necessity for gynecologists to recognize the importance of removing the entire intramural or muscular section of the fallopian tubes when performing salpingectomy. This, he says, must be done if they desire to avoid not only the occurrence of serious cases of ectopic gestation as instanced in three cases cited, but also to prevent the development of interstitial abscessés in any subsequent infective process that might arise.

Chronic Infection of Cervix Uteri.—It is Schlink's practice when performing subtotal hysterectomy for fibroid growths, uterine fibrosis or gross inflammatory disease of the appendages, to remove the endocervical lining of the cervix from above in order to eliminate postoperative discharge, as the cervix is nearly always infected in such conditions, and to do away with the possibility of subsequent reinfection or cancer. He has devised a special enucleator for this purpose.

Medical Journal of South Africa, Johannesburg

19: 305-346 (May) 1924

Streptococcus Group and "Rheumatism." J. Pratt-Johnson.—p. 317.
*Effects of Altitude on Health and Longevity. J. Schneider.—p. 321.
Law and the Doctor in South Africa. H. De Villiers.—p. 332.

Effects of Altitude on Health.—The established facts which Schneider has gathered in the course of investigating the different aspects of the effects of altitude (about 4,000 feet, and over, under South African conditions) on health and longevity are these: The atmosphere at these high altitudes is more rarified, drier, colder and possesses higher cooling powers. The effects on an individual who arrives from a low altitude are to produce certain physiologic processes which, in some instances, border on the pathologic. The chief effects are: an increase in the number of the erythrocytes per cubic millimeter of blood, and a total increase in the volume of the blood; an increase in the quantity of the hemoglobin contained in each cell; deeper, and after a time, slower breathing; an increase in the size of the chest wall; a decrease in the tension of the carbon dioxid in the blood; a lowering of the blood pressure, which is, however, chiefly of a temporary nature and due to a temporary diminution of the blood volume, and vasomotor and other influences.

Sei-I-Kwai Medical Journal, Tokyo, Japan

43: 1-14 (June) 1924

Combination of Primary Lung Tumors and Fetal Atelectasis. K. Nakasone.—p. 1.
Blood Changes in Mice from Carcinoma Transplantation. K. Oba.—p. 11.
Glycogen in Central Nervous System of Chick Embryo. C. Koyanagi.—p. 13.

South African Medical Record, Cape Town

22: 247-270 (June 14) 1924

Ureteral Catheterization and Pielography in Surgical Diseases of Kidney. E. B. Fuller.—p. 247.
Osteochondritis Deformans. O. J. Currie.—p. 251.
Differential Diagnosis of Typhoid and Typhus Fevers.—p. 254.

Archives des Maladies du Cœur, Paris

17: 321-400 (June) 1924

*Lymphosarcoma with Leukemia. S. I. De Jong and Louet.—p. 321.
Digitalis. E. Bordet and J. Yacoel.—p. 335.
A Case of Flutter 1:1. L. Gallavardin et al.—p. 342.
Congenital Aortic Stenosis. F. Bezançon and R. Azoulay.—p. 345.
Present Status of Surgical Treatment of Angina Pectoris. J. Heitz.—p. 350.

Coexistence of Lymphosarcoma and Leukemia.—De Jong and Louet report a case, with four illustrations, of a latent lymphosarcoma in the mediastinum coinciding with acute leukemia. They refer to Peyton Rous' infectious and transmissible sarcoma in fowls and to Ellermann's experiments in transmission of leukosis, which is similar to acute leukemia in man. "Further researches may establish a connection between leukemia and sarcoma."

Bulletin de l'Académie de Médecine, Paris

92: 839-874 (July 8) 1924

*Tests of Tryparsamide. G. Guillain and L. Girot.—p. 850.
Curable War Blindness. Bonnefon.—p. 862.
Modifications of Blood Pressure in Respiration. Mouktar.—p. 864.
Estimation of Surface Area of Body. B. Roussy.—p. 866.
Appendicitic Origin of Biliary Infection. Caplesco.—p. 869.

Therapeutic Study of Tryparsamide.—Guillain and Girot relate that their experiences in three cases of general paralysis, one of neurosyphilis and one of disseminated sclerosis do not justify the assumption that tryparsamide represents definite progress in the treatment of neurosyphilis. It did not display any more penetrating action than neo-arsphenamin, but the injections were painless and always free from untoward by-effects. The Wassermann reaction in the cerebrospinal fluid was not modified, and the benzoin reaction only slightly.

92: 875-916 (July 15) 1924

Glycolytic Insufficiency and Insulin. C. Achard.—p. 880.
*Landry's Paralysis Postpartum. G. Marinesco.—p. 900.
Tuberculosis in Infants. P. Nobécourt and G. Boulanger-Pilet.—p. 906.
*Intracardiac Transfusion. K. Djenab and Mouchet.—p. 910.
Intratracheal Temperature in Man. Collet.—p. 912.

Landry's Paralysis Postpartum.—Marinesco observed a case of acute ascending spinal paralysis occurring after delivery. Repeated inoculations of rabbits with the cerebrospinal fluid and cultures were all negative. He believes that the disease was caused by an invisible microbe, an ultravirus. The patient recovered.

Intracardiac Transfusion of Blood.—Djenab and Mouchet's experiments on dogs did not prove any advantage from transfusion of blood into the heart in case of grave hemorrhage with collapse.

Bulletins de la Société Médicale des Hôpitaux, Paris

48: 941-1004 (June 27) 1924

*Cholesterol in Pleuritic Effusion. A. Coyon et al.—p. 943.
*Diphtheria with Typhoid Syndrome. Cathala and Giroire.—p. 948.
Ventriculography After Intraspinal Insufflation. Cestan and Riser.—p. 953.
Participation of Skeleton in Hodgkin's Disease. Béclère.—p. 961.
Autodrsensitization in Hemoglobinuria. A. Ricaldoni.—p. 966.
Insulin in Diabetic Coma with Tuberculosis. F. Rathery and Dreyfus-Sée.—p. 973.
Cure of Paraplegia by Removal of Psammoma. Faure-Beaulieu and T. De Martel.—p. 979.
Semeiologic Import of Nonsurgical Drainage of Biliary Tract. M. Chiray and M. Milochevitch.—p. 989.
Apparatus for Pneumothorax. Baillet.—p. 1001.

Cholesterol in Pleuritic Effusion.—Coyon, Fiessinger and Meignant report two cases of pleurisy in which the effusion contained 3.6 and 3.25 per thousand cholesterol. They claim that only eleven similar cases have been recorded to date. As the cholesterol blood content was normal, it may be assumed that the cholesterol was of local origin.

Diphtheria Syndrome Simulating Typhoid.—Cathala and Giroire, referring to a personal case, point out the difficulty of diagnosis when the diphtheria bacillus is localized exclusively in the tonsils, and the clinical features are deceptively similar to typhoid fever.

48: 1005-1090 (July 4) 1924

Negative Serologic Tests in Subjects Resistant to Arsphenamin. L. Lortat-Jacob and J. Roberti.—p. 1006.
Uremia in Mercuric Chlorid Nephritis. Lemierre and Bernard.—p. 1008.
*Apyretic Action of Azotemia. Idem.—p. 1018.
*Cerebral Hemorrhage Preceding Typhoid Fever. Apert and Garcin.—p. 1025.
Test Glycuronuria in Liver Disease. G. Parturier.—p. 1028.
Anatoxin Reaction in Diphtheric Allergy. C. Zoeller.—p. 1032.
Abnormally Brief Bleeding Time. P. Emile-Weil.—p. 1038.
Variation in Bilirubin in Duodenal Contents. M. Chiray et al.—p. 1040.
Rheumatoid Purpura as Form of Serum Sickness. V. de Lavergne and R. Bize.—p. 1059.
Symmetric Lipomatosis. P. Menetrier et al.—p. 1064.
Congenital Leontiasis Ossea. E. Apert and R. Garcin.—p. 1072.
Encysted Pneumothorax Versus Cavity in Lung. E. Sergent and F. Bordet.—p. 1076.
Multiple Localization of Lipomatosis. Pasteur Vallery-Radot et al.—p. 1083.
Portable Apparatus for Pneumothorax. V. Kouchnir.—p. 1086.

Apyretic Action of Azotemia.—Lemierre and Bernard, referring to a patient with typhoid fever and nephritis, suggest the paradoxic idea that the deficient functioning of the kidneys had been of some utility, as the retention of nitrogen in the blood had exerted a depressing action on the fever.

Cerebral Hemorrhage Preceding Typhoid Fever.—Apert and Garcin report a case in which cerebral hemorrhage occurred eight days before the clinical symptoms of typhoid fever. The hemorrhage is explained by congestion of the meninges from the toxic action of the typhoid bacilli during the period of incubation.

Comptes Rendus de la Société de Biologie, Paris

91: 325-420 (July 11) 1924. Partial Index

*Flora of Appendix. G. M. Duthie.—p. 327.
*Tuberculin Tests in Lupus. L. Béthoux.—p. 329.
*Cause of Koch's Phenomenon. A. Boquet and L. Nègre.—p. 335.
*Experimental Vaccination Against Staphylococci. A. Urbain.—p. 341.
*Radiosensitivity in Isolated Gland. J. Jolly.—p. 351.
*Lung Fats in Fixation of Calcium. H. Roger et al.—p. 357.
*Action of Calcium on Heart and Kidneys. L. Brull.—p. 371.
*Ferments in Blood Platelets. J. Roskam.—p. 373.
*Action of Vagus on Blood Pressure. Zunz and Govaerts.—p. 389.
*Action of Insulin on Coagulation. J. La Barre.—p. 393.
The Tamponing Mechanism of Calcium Ions. Kugelmass.—p. 397.
Surface Tension in Biology. W. Kopaczewski.—p. 402.
*Kidney Functioning in Experimental Nephritis. J. Frandsen.—p. 416.
Production of Insulin Outside the Pancreas. E. Lundberg.—p. 418.

Fallax Bacillus in Appendicitis.—Duthie found *Bacillus fallax* in an acute gangrenous appendicitis (three cases). This anaerobe has not been noted before in the intestine of man, he remarks.

Antibodies and Tuberculin Reaction in Lupus.—Béthoux's research proved that the serum of persons affected with tuberculosis of the skin, and especially with lupus, contains few, if any, tuberculous antibodies. The intensity of the skin tuberculin reaction does not depend on the amount of antibodies.

Induced Koch's Phenomenon.—Boquet and Nègre produced Koch's phenomenon in guinea-pigs with virulent and avirulent tubercle bacilli, as also with paratuberculous and dead tubercle bacilli and others deprived of their fats. They assume consequently that the phenomenon is a reaction of local hypersensitiveness, chiefly to the proteins of these bacilli.

Vaccination of Rabbit Against Staphylococcus Infection.—Urbain's experiments showed that application of staphylococcus filtrates on a shaved skin caused in the rabbit an immunity against lesions of the skin from the same bacteria. The vaccination was negative by way of the digestive tract.

Radiosensitivity in Isolated Gland. — Jolly noted an increased resistance to the roentgen rays in the thymus and a lymphatic gland, shut off from the circulation. He presumes that the isolation, inducing a slower vital activity, protects the cells.

Action of Lung Fats on Fixation of Calcium.—Experiments persuaded Roger, Binet and Vagliano that the fats of the lung, besides vitamin A, contain antirachitic vitamins which fasten the calcium in the organism.

Action of Calcium on Heart and Diuresis.—In Brull's experiments, the calcium strengthened the contractions of the isolated heart of a dog and a rabbit. A large dose of calcium produced transient auriculoventricular dissociation. A medium dose of calcium ions caused bradycardia in the animal, owing to the stimulation of the vagus center. The

calcium acted as a vasoconstrictor of the peripheral vessels, increasing the blood pressure. The diuresis did not change.

Blood Platelets and Ferments.—Roskam's experiments did not show proteolytic or lipolytic ferments in the platelets of a rabbit and a dog.

Action of the Vagus on Blood Pressure.—Zunz and Govaerts obtained by faradization of the vagus nerve a marked decrease of the blood pressure and slowing of the heart. It was accompanied in dogs by a humoral effect, similar to the effect from stimulation of the splanchnic nerve.

Action of Insulin on Clotting Time.—La Barre's conclusion is that a weak dose of an impure insulin retards coagulation, both in vivo and in vitro. A pure insulin does not affect the clotting time.

Tubular Nephritis in Rabbits.—Frandsen induced in rabbits a chronic tubular nephritis through administration of chromium. The elimination of chlorids was arrested, and elimination of nitrogen declined. Water secretion was intact, owing to the normal condition of the glomeruli.

Paris Médical

1-36 (July 5) 1924

Cardiovascular Diseases in 1924. Lereboullet and Heitz.—p. 1.
Importance of Repeated Radioscopy in Cardiovascular Disease. H. Vaquez and E. Bordet.—p. 14.
Chronic Rheumatic Heart Disease. Ribierre and Pichon.—p. 19.
*Hypertension of Syphilitic Origin. A. Dumas.—p. 26.
*Intracardiac Injection of Epinephrin. D. Petit-Dutaillis.—p. 30.

Hypertension of Exclusively Syphilitic Origin.—Dumas reports four cases of variable high blood pressure in persons under 35, or older, in which the kidneys and aorta seemed to be normal. Treatment in time of this "solitary hypertension" might have warded off the fatal cerebral hemorrhage or gangrene compelling amputation.

Intracardiac Injection of Epinephrin.—Petit-Dutaillis urges that this method of resuscitation should not be reserved for the last resort. In postmortem examination in over a hundred cases it was almost impossible to find the track of the needle. Greuel has reported two cases of successful revival in heart failure in diphtheria; Baumann in a case of sudden syncope in whooping cough, and Bodon in sudden cardiac syncope terminating an attack of angina pectoris under his direct observation. He adds another case to the thirty-three collected from the literature. The resuscitation was complete in 51.9 per cent. He knows of only two cases in which no benefit was realized. In two cases the surgeon continued the interrupted operation.

37-52 (July 12) 1924

*Gastrocolonic Fistula. R. Savignac.—p. 37.
*Tetanus of Cosmetic Origin. Lemanski.—p. 44.
Conservation of Function After Fracture of Arm. Schwartz.—p. 46.
Meningococcus Infection and Influenza. Dopter.—p. 47.

Gastrocolonic Fistula.—Savignac recalls that a fistula between the stomach and colon may be accompanied by diarrhea with undigested food in the stools. A fetid breath and belching with fecal odor often precede fecaloid vomiting. The roentgen-ray examination may be misleading unless repeated several times. Besides the rare cases of a traumatic fistula, tuberculosis and syphilis of the stomach or of the intestine, as well as an abdominal abscess, may exceptionally entail a gastrocolonic fistula. The common cause is an ulcer, especially cancer of the pylorus.

Tetanus Produced by Injury from Cosmetics.—Lemanski reports a case of partial tetanus of the head and the neck. The infection followed slight erosions on the scalp, produced by a comb while dyeing the hair.

Presse Médicale, Paris

32: 577-584 (July 9) 1924

Gouty Joints. M. Letulle and M. P. Weil.—p. 577.
*Dilatation of Stomach and Ulcer. G. Leven.—p. 579.
Pathology of the Peripharyngeal Spaces. P. Truffert.—p. 580.

Connection Between Dilatation of the Stomach and Ulcer.—Leven insists that dilatation of the stomach precedes the ulcer. The dilatation involves irritation of the solar plexus, followed by deficient nutrition of the pylorus. This produces changes in the circulation and consecutive mechanical and chemical irritation of the pyloric mucosa. The local changes are complicated with spasms, infection of the mucosa and adhesions. The dilatation of the stomach has to be treated first, then both dilatation and ulcer, with surgical intervention if this fails.

32: 585-596 (July 12) 1924

*Receptive Cells in Local Immunity. A. Besredka.—p. 585.
Hematoma in Ectopic Pregnancy. M. Chaton.—p. 587.
Leriche's Periarterial Sympathectomy. Papilian and Cruceanu.—p. 588.
Recent Works on Tuberculin Therapy. L. Cheinisse.—p. 589.

Local Immunity.—Besredka explains local immunity as that obtained through vaccination of a single organ, although it is mostly accompanied by a general immunity. Local immunity of this kind does not depend on antibodies. It occurs in anthrax and staphylococcus vaccination in which the toxins have a selective affinity for receptive cells in the skin. Antityphoid and antidysenteric vaccines are instances of local immunity, the toxin combining with the receptive cells in the intestines. Thus vaccine therapy, he says, does not cure the affected receptive cells but protects the healthy receptors and checks the infection. It may be assumed that some serums contain, besides the antibodies, a specific antitoxin which vaccinates the receptors and produces local immunity. Therefore, the receptive cell is a fourth factor in immunization, supplementing the triad of virus, phagocytes and antibodies.

32: 597-608 (July 16) 1924

Sea Climate in Treatment of Tuberculosis. Bernard and Loir.—p. 597.
*Syphilis and Angina Pectoris. L. Gallavardin.—p. 598.
Hydatid Cyst in Ischiorectal Fossa. Vergnory et al.—p. 602.
Antagonism Between Tonus and Automatism of the Vessels. R. Schrapf.—p. 602.

Connection of Syphilis with Angina Pectoris.—Gallavardin's statistics of 450 instances of angina pectoris in connection with overexertion show that angina pectoris is of syphilitic origin in all cases combined with an aortic aneurysm, in 90 per cent. of patients with aortic insufficiency, and in 33 per cent. of cases without aortic disturbance, but under 50 years of age.

32: 609-620 (July 19) 1924

*Specific and Nonspecific Bacteriotherapy. J. Danysz.—p. 609.

Specific and Nonspecific Protein Therapy and Bacteriotherapy.—Five observations of asthma and personal research proved to Danysz that most infections and chronic diseases, such as are submitted to nonspecific protein therapy, manifest a hypersensitization. The hypersensitization is of anaphylactic origin. As the anaphylactic shock has no curative effect, protein therapy therefore should be avoided, as it exposes the patient to a superposed sensitization in addition to the sensitization he already has. Even in so-called specific bacteriotherapy, the anaphylactic and antianaphylactic reactions forming the therapeutic response are not actually specific to the infecting microbe.

32: 621-628 (July 23) 1924

*Subungual Hematoma in Tetanus. L. Bérard and A. Lumière.—p. 621.
*Tobacco and Angina Pectoris. L. Gallavardin.—p. 622.
Topography of Traube's Semilunar Space. D. Berceanu.—p. 622.

Subungual Hematoma and Tetanus.—Bérard and Lumière found a subungual hematoma in five of seven cases of tetanus. A blood effusion beneath the nail is a favorable culture medium for tetanus bacilli, as the effusion is cut off from the circulation. Prophylactic serotherapy is indispensable.

Tobacco and Angina Pectoris.—Gallavardin relates that of 200 men with angina pectoris, but no signs of syphilis, 27 per cent. had never smoked tobacco and an additional 4 per cent. had given up smoking years before the first attack of angina pectoris. Only 18.5 per cent. were immoderate smokers among the 137 others, 38 per cent. of them were mild smokers. Including the nonsmoking women, in fully 50 per cent. of his total cases of angina pectoris, tobacco cannot be incriminated.

Revue de Chirurgie, Paris

62: 363-442, 1924

Resection of Carotid Artery with Cancer of Tongue. Delbet.—p. 363.
Gastro-Enterostomy with Single Tier of Suture. Petrescu.—p. 369.
*Fracture of the Ankle. G. Ferry.—p. 375.
*Hydatid Cysts of Long Bones. H. Costantini.—p. 401.

Nonoperative Treatment of Fracture of Malleoli.—Ferry refers to fracture of both malleoli and Dupuytren's (Pott's) fracture, saying that his experience in forty-two cases confirms the advantages of simple reduction under roentgenoscopic control and the use of a splint, with plaster, holding the foot in the extreme varus position, maximal hyperadduction, from the very first. By this means it is possible to obtain complete anatomic and functional repair, unless so much has been chipped off that reconstruction is impossible without direct access.

Hydatid Cysts in Long Bones.—Costantini gives summaries of fifty-three cases, including one from his own experience. The limb was saved in twenty-seven cases, and seven other cases were necropsy surprises. The onset is insidious and there is no pain until infection occurs. Fracture may be the first symptom to call attention to the lesion.

Schweizerische medizinische Wochenschrift, Basel

54: 669-692 (July 24) 1924

Invagination of Jejunum in Gastro-Enterostomy. H. Vulliet.—p. 669.
*Roentgen Rays, Blood and Agglutinin Formation. C. Frei and A. Alder. —p. 670.
*Tuberculosis and Dermographia. G. Stutz.—p. 676.
Postencephalitic Disturbances. Jörger.—p. 679.
The Predisposition. E. Hanhart.—p. 680. Conc'n.

Roentgen Rays, Blood and Agglutinin.—Frei and Alder found no lowering of the agglutinin titer after roentgen irradiation. The production of agglutinins occurs without regard to the severity of the roentgen injury to the blood formation. Simultaneous irradiation and immunization was advantageous. It seems that the agglutinins are not formed in the same place as the blood.

Tuberculosis and Dermographia.—Stutz found a certain parallelism between the Pirquet reaction and the increased dermographia after painful stimuli in tuberculous patients. Both reactions were frequently more marked over the diseased lung.

Brazil-Medico, Rio de Janeiro

1: 317-332 (June 7) 1924

*Uremia and Mental Derangement. H. Roxo.—p. 317.
Aseptic Flushing of Abdominal Cavity. J. Sant'Anna.—p. 320.
Murmur at Base in Aortic Insufficiency. J. L. de Mesquita.—p. 322.
Experiences with Insulin in Diabetes. O. Clark.—p. 324.

Uremia and Mental Derangement.—Uremia was responsible for 33 per cent. of the thirty-one deaths among the 1,505 persons admitted to the Institute of Neuropathology at Rio de Janeiro in 1923. The mental derangement was of the paroxysmal confusional type with extreme irritability and lucid intervals. Roxo warns that an attempt to reduce the agitation with a sedative adds the toxic action of the drug to the uremic poisoning, with possibly fatal result.

1: 333-348 (June 14) 1924

*Treatment of Anthrax. Cassio de Rezende.—p. 333.
Nature of the Nerve Force. A. L. Pimenta Bueno.—p. 336.
Aneurysm of the Arch of the Aorta. Cardoso Fonte.—p. 340.
Three Fulminating Cases of Epidemic Meningitis. Gomes.—p. 343.

Protein Therapy in Anthrax.—De Rezende's illustrations show the extensive anthrax process on the middle of the back, treated with parenteral injections of milk and local application of an unguent and cataplasms. Healing was soon complete. The protein therapy seemed to infuse a new vitality into the elderly tissues.

Prensa Médica Argentina, Buenos Aires

11: 93-120 (June 30) 1924

*Viscosimetry in Tuberculosis. Bonorino Udaondo and Casteigts.—p. 93.
*Latent Tuberculosis in School Children. Cabella and Oliver.—p. 95.
*Experiences in Dermatologic Clinic. J. L. Carrera.—p. 97.
Radium in Gynecology. Barterrica and Figueroa Casas.—p. 99.

Viscosimetry in Tuberculosis.—The viscosity quotient (Czepai and Torday) ranged from 1.7 to 2.5, average 2.1, in 15 healthy adults; from 2.1 to 3.1, average 2.6, in 15 patients with incipient tuberculosis, and from 2.8 to 4.4, average 4.1, in 49 patients with advanced and progressing tuberculous lesions in the lungs.

Latent Tuberculosis in School Children.—Cabella and Oliver obtained a positive intradermal tuberculin reaction in 73.58 per cent. of the 157 supposedly healthy children in a Buenos Aires school in one of the poorest districts.

Sodium Salicylate in Dermatology.—Carrera extols the fine results realized in psoriasis and in eczema on a gouty basis under treatment with intravenous injection of sodium salicylate. He used a 20 per cent. solution. Parenteral protein therapy proved disappointing in all the various skin affections.

Autohemotherapy in Dermatology.—In Carrera's forty cases given this treatment, it proved exceptionally effectual in idiopathic pruritus and furunculosis. It cured in one case of vulvar pruritus that had resisted all other internal and external measures through four years, and in one of senile pruritus of two years' standing, one of pruritus in a diabetic, and in two of essential pruritus, but no effect was apparent in four other pruritus cases. The effect was good in some and nil in other cases of eczema, purpura and venereal adenitis.

Revista Médica del Uruguay, Montevideo

27: 145-188 (May) 1924

*Adhesive Pericarditis. Scremini and Montes Pareja.—p. 145.
Double Pyramidal and Extrapyramidal Syndrome. J. M. Estapé.—p. 155.
*Febrile Syphilitic Disease of Liver. J. B. Morelli.—p. 163.
Heart Block. Gandolfo Canessa.—p. 176.
*Febrile Syphilitic Disease of Liver. H. Artucio.—p. 183.

Adhesive Pericarditis.—Scremini and Montes Pareja comment on the amazing improvement that followed Brauer's cardiolysis in the young man, aged 17, whose adhesive pericarditis was of the gravest type, with the Wenckebach, Broadbent, Cejka and other signs. Except for persisting tricuspid insufficiency, he seemed to be restored to health for a month but then indiscretions in diet entailed uncontrollable vomiting, fatal in four days.

Febrile Syphilitic Disease of the Liver.—In Morelli's case the wetnurse had been infected by a syphilitic infant but the lesion on the nipple had healed without other manifestation. A year later jaundice with intermittent fever, afternoons, for two weeks gradually subsided under mercurial inunctions and potassium iodid. Five years later an operation for gallstones was done in spite of Morelli's protests. No gallstones but a tumor-like mass was found which proved to be an agglomeration of four gummas, confirmed by the microscope. The woman's liver seems entirely sound at present, sixteen years since the last specific treatment. The short interval between the infection and the first liver disturbance, the absence of enlargement of the spleen, the retention type of the jaundice, and the rapidly progressive character of the disturbances until arrested by treatment were the special features of the case. In another case there was slight fever every afternoon for two years in an elderly man, with a history of syphilis twenty-seven years before, with pain in the shoulder and slightly enlarged and tender liver. Laparotomy on a boy, aged 9, with intermittent fever for two weeks and enlarged liver revealed, instead of the expected abscess, several gummas.

In Artucio's case, the main features were the protracted variable fever, and the enlargement of liver and spleen. The peculiarly rapid and complete cure under treatment distinguished the entire group in these febrile hepatitis cases.

Semana Médica, Buenos Aires

1: 1251-1302 (June 26) 1924

*Diagnosis of Hydatid Cyst. E. Troise et al.—p. 1251.
Insulin in Diabetes in Children. Navarro and Dabusti.—p. 1255.
Diagnosis of Cyst in Pancreas. J. R. Goyena.—p. 1258.
*Papillomatosis of Penile Urethra. J. Salleras.—p. 1265.
Vaccine Therapy in Gynecology. L. Allende Lezama.—p. 1266.
Radium Treatment. P. Castro Escalada.—p. 1273.

Sedimentation Test in Differentiation of Cancer and Hydatid Cyst.—Troise, de Marval and Róvere noted that the speed of sedimentation of erythrocytes was always within normal range with a hydatid cyst so long as there was no suppuration. When suppuration occurs, the speed is accelerated, and rapidly progressive, while with cancer, acceleration is slowly progressive.

Papillomatosis of Penile Urethra.—Salleras' case teaches the danger of leaving any papilloma in this region. Phimosis

had interfered with drainage, and the entire penile urethra had been destroyed by the results of suppuration and increasing crops of papillomas. He advises immediate destruction of a papilloma with glacial acetic acid; nothing else answers the purpose so effectually.

2:1-52 (July 3) 1924

Blood Transfusion in Childbirth Hemorrhage. De Gaudino.—p. 1.
Congenital Laryngeal Strider. F. Schweizer.—p. 6.
*To Render Fetal Heart Sounds Audible at a Distance. Beruti.—p. 9.
Ileus in Amebiasis. J. R. Goyena.—p. 10.
*Blood Serum After Roentgen-Ray Exposures. Roffo and Correa.—p. 17.
Radium Emanations in Treatment. E. J. Jenquieres.—p. 23.
Hemoclastic Crisis in Gallstone Surgery. Fox and Rossigneli.—p. 30.
Protecting Action of Yeast Against Anthrax in Rabbit. Fynn.—p. 31.

To Render Fetal Heart Sounds Audible.—Beruti presents evidence claiming priority by six months over publications elsewhere in this line. He not only made it possible for all in the room to hear the heart sounds of the fetus in the uterus in the last month of pregnancy, but was able to record them on the revolving drum.

The Serum After Exposure of Cancer to the Roentgen Rays.—Roffo and Correa chart the findings in the blood serum of eight controls free from cancer, nine persons with some form of malignant disease, and twenty-seven with cancer treated by roentgen-ray exposures. The surface tension and the viscosity were always augmented in the irradiated cancer cases, but the findings were conflicting in regard to the specific gravity, conductibility and p_H.

Archiv für Kinderheilkunde, Stuttgart

74:241-320 (July 12) 1924

*Etiology of Rickets. F. Wiltschke.—p. 241.
Septic Anemia in Infants. M. Frank.—p. 256.
Water Metabolism in Muscle. H. Lubinski.—p. 263.
*Basal Metabolism in Children. W. Klein et al.—p. 286.

Etiology of Rickets.—In Wiltschke's serial examinations of 870 infants at Graz, the severe forms of rickets were always found associated with lack of sunlight. The main factor seems to be the deficiency in sunlight-permeated air for the infant to breathe. There seems to be something in sunned air which wards off rickets, possibly by sensitizing the vitamins in the food. Without it there is dyscrasia, manifested in rickets. Over 83 per cent. were breast fed of the 38 per cent. that had rickets.

Basal Metabolism in Children.—The wide differences in the basal metabolism of children between 7 and 10 observed by Benedict were not confirmed by the research on twelve children reported here. The calories ranged from 1061.8 to 1188 in ten of the children and in the others the figures were 972.1 and 1253.1.

Beiträge zur klinischen Chirurgie, Tübingen

132:1-247, 1924

Death from Unsuspected Tumor in Trachea. Petren and Sjövall.—p. 1.
Blood Transfusion in Surgery. E. Hempel.—p. 7.
*Implant for Para-Articular Arthrodesis. M. Kappis.—p. 93.
*Invagination Ileus After Gastro-Enterostomy. M. v. Brunn.—p. 106.
Chyle Fistulas. H. W. Knipping and H. Kümmell, Jr.—p. 123.
Experimental Fractures of Joints. A. Schmidt.—p. 129.
Tardy Rupture of Tendon. R. Dittrich.—p. 150.
Perforation After Invagination Ileus. E. Becker.—p. 155.
*Acute Atrophy of Bone. H. Herfarth.—p. 165.
*Mechanism of Nerve Blocking. O. Wiedhopf.—p. 191.
*Reflex and Sensory Phenomena with Surgical Disease. I. Rasdolsky.—p. 200.
Resection of Diaphragm for Cancer. E. Hesse.—p. 215.
Histology of Köhler's Disease. T. Hühne.—p. 226.
Etiology of Subacromion Bursitis. N. v. Hedry.—p. 244.

Implant Outside Hip Joint.—Kappis reiterates the importance of the periosteum for the growth of new bone. In using an implant to reenforce the hip joint, outside the joint proper, he advises to use a bone shaft complete, with periosteum intact.

Invagination after Gastro-Enterostomy.—Brunn describes the eighth case on record of ileus from invagination of the jejunum into the gastro-enterostomy opening, and says it is the first case in which the roentgen-ray findings were so characteristic that no one can mistake the clinical picture henceforth after looking at the two roentgenograms he reproduces.

Acute Atrophy of Bone.—Herfarth's study of Sudeck's atrophy is based on 250 cases of unmistakable acute atrophy, with 12,500 roentgen plates. There had always been some preceding fracture or other trauma, freezing, burn, or (twelve cases) acrodermatitis atrophicans. Some vasomotor disturbance, by reducing the blood supply, was evidently the main factor, supplemented by the disuse of the limb.

Mechanism of Nerve Blocking.—Wiedhopf's clinical and experimental research has confirmed that the vessel nerves, running in the spinal nerves, feel the effect of local anesthesia first; then come the sensory nerves and then the motor nerves. Return of function proceeds inversely. This effect on the vasomotor nerves is evident both subjectively and objectively in the local hyperemia which it entails. This local hyperemia can be utilized to demarcate in amputating for gangrene, and to detect spastic contraction of a vessel in case of nerve trauma. The data presented testify anew to the advantage of shutting off the circulation before operating. They suggest further that the drop in the blood pressure with splanchnic nerve blocking is a physiologic phenomenon. It might be well to combat this extreme drop in the pressure from the paralysis of peripheral nerves by intravenous drip infusion, with epinephrin, during the anesthesia.

Reflex and Sensory Phenomena from the Vagus Nerve in Course of Surgical Affections of the Internal Organs.—Rasdolsky examined 188 patients from this point of view, including eighty-nine examined during and after the operation. The most frequent phenomenon noted was hyperalgesia of the posterior wall of the outer ear. A prick, pressure or tap of a hammer at this point induced violent, sometimes unbearable pain in practically every case of an acute inflammatory process in the internal organs (especially cholecystitis, perforated ulcer or appendicitis), ptosis, pylorospasm, disturbance from adhesions and heart defect, and always on the side nearest the lesion, or most pronounced on that side. The only failures in the entire list were in two cases of gastric cancer and two of pylorospasm in which there was very little pain anywhere, and two of kidney colic two days after recovery. "The sensory phenomena and reflexes from the vegetative nervous system form a periscope through which we can inspect conditions in the internal organs." Even the common headache with affections of the internal organs usually begins in or is restricted to the side of the lesion. In one case of pains from sagging kidneys, the left headache subsided after nephropexy on the kidney on that side but persisted on the right. Pain on pressure of the emerging points of the trigeminal and occipital nerves was pronounced on the side of the lesion in about 75 per cent., and anisocoria in nearly 90 per cent. The uvula was displaced away from the diseased side in 60 per cent., but this displacement is occasionally seen in the healthy. A distinct difference in the color of the iris was manifest in more than 60 per cent.; in 80 per cent. the color looked faded, and in 20 per cent. it looked brighter than its mate. This difference always disappeared on recovery. Lacrimation on the affected side was more pronounced in some of the cases. The same symptom was observed with affections of the most diverse organs and paralleled them in intensity.

Deutsche medizinische Wochenschrift, Berlin

50:975-1006 (July 18) 1924

*Diagnosis and Treatment of Hemorrhoids. L. Kuttner.—p. 975.
*Surgical Treatment of Hemorrhoids. R. Mühsam.—p. 977.
*Treatment of Cataract. W. Uhthoff.—p. 978. Conc'n.
Modern Eyeglasses. H. Erggelet.—p. 980. Conc'n.
*Active Treatment of Abortion. G. Burghardt.—p. 983.
Clinical Leukocyte Counts. R. Hammerschlag.—p. 984.
*Syphilis Among the Kalmucks. M. Rosentul.—p. 986.
*Etiology of Erysipeloid. D. Acél.—p. 988.
*Staining of Germs in Sections. F. Horálek.—p. 988.
Tuberculin and Sedimentation Tests. Tegtmeier.—p. 990.
*Conservative Treatment of Furuncles. Canon.—p. 991.
*Logopedics. E. Fröschels.—p. 992.

Diagnosis and Treatment of Hemorrhoids. — Kuttner requires a digital examination of the rectum and endoscopy, including the sigmoid flexure, in every case of hemorrhoids. Otherwise cancer, dysentery or gonorrhea of the rectum might be overlooked. Too drastic laxatives and irritating enemas should not be allowed. About 75 to 100 c.c. of olive

oil infused with a soft tube in the evening acts favorably. The anal region should be cleaned carefully after every defecation. Paper and sponges are not suitable. Cotton is to be preferred. Cold sitz baths are advantageous. Surgical treatment is indicated if hemorrhoids cause much discomfort or continue to bleed or are prone to prolapse.

Surgical Treatment of Hemorrhoids.—Mühsam describes various surgical methods of treatment of hemorrhoids, especially the cauterization which he prefers.

Treatment of Cataract.—Uhthoff relates his opinion on every detail of the treatment of cataract on the basis of his experience with 7,000 operations performed by himself.

Active Treatment of Abortion.—Burghardt recommends exclusively active treatment even in infected abortions. He prefers curettement to the digital procedure because it requires less dilatation of the cervix and is more aseptic. Only one died of the fifty-three women with infected abortion whom he treated actively.

Syphilis Among the Kalmucks.—Rosentul considers syphilis as the main cause of the decrease of the Kalmuck tribe. It is transmitted as a rule extragenitally. The Kalmucks are very hospitable, and share the pipe and glass of sour milk with all the guests. Arsphenamin injections ("the German needle") became very popular with them.

Etiology of Erysipeloid.—Acél found bacteriologically and serologically unquestionable germs of swine erysipelas in five patients with erysipeloid.

Staining of Spirochetes and Other Germs.—Horálek describes his method for staining *Spirochaeta pallida* in sections. A double and protracted staining with hematoxylin revealed cocci and other germs even in sections of organs which had been kept for ten years in formaldehyd.

Conservative Treatment of Furuncles.—Canon treated 110 patients with furuncles and eighteen with carbuncles exclusively with immobilization and a dressing with a weak solution of aluminum acetate.

Treatment of Speech Defects: Logopedics.—Fröschels discusses the importance and the border-lines of the science of speech.

Klinische Wochenschrift, Berlin

3: 1345-1384 (July 22) 1924

*Experimental Epidemiology. F. Neufeld.—p. 1345.
*Colloidoclastic Reactions. E. Meyer.—p. 1352.
*Blood Serum After Small Injections. H. Handovsky.—p. 1354.
*Connections Between Vagus and Sympathetic. W. Fick.—p. 1355.
*Hormones and Oxidation of Carbohydrates. A. Gottschalk.—p. 1356.
The Thyroid and the Blood. P. Buse.—p. 1357.
*Roentgen Exposures and the Offspring. W. Schmitt.—p. 1358.
*Blood Phosphates in Myxedema. M. Landsberger.—p. 1360.
*Phagocytosis After Splenectomy. H. Hirschfeld and Sumi.—p. 1361.
*Ventral Position for Infants. W. Lasch and M. Fischer.—p. 1362.
Cutaneous Pigment Reaction. E. Loewy.—p. 1362.
*Ectoplasm and Endoplasm of Germs and Immune Bodies. H. Braun and R. Nodake.—p. 1363.
Flocculation Test in Syphilis. H. Sachs et al.—p. 1363.
Vasomotors in Avitaminosis. D. Alpern.—p. 1364.
*Duodenal Intubation in Typhoid Carriers. A. Remus.—p. 1365.
Hemoptysis. G. Schröder.—p. 1366.
Study of Heredity. V. Jollos.—p. 1369. Conc'n.

Experimental Epidemiology.—Neufeld reviews critically the results of the epidemiologic experiments of Topley, Amoss and Webster. He believes in the importance of the quantity of infectious germs. It is not necessary to kill the last remaining bacillus.

Colloidoclastic Reactions.—Meyer, with his collaborators, observed changes of blood colloids after intravenous injections of from 10 to 20 c.c. of a 10 to 20 per cent. glucose solution. A leukopenia may also follow the injection. Other crystalloids sometimes have similar effects. He attributes them to a change of reactivity of the vagosympathetic system caused by the primary changes in the blood colloids. He reproaches Widal for having already coined the same term (colloidoclasis), and declares that he means something different by it.

Blood Serum After Small Injections.—Handovsky found in normal human subjects (not in healthy cattle) a broad emulsion layer after shaking the serum with ether. The separation was perfect in some patients after intravenous injection of a small amount of glucose or sodium chlorid solution. Serum from these patients showed the same phenomenon when the substances were added in vitro. The amount of cholesterol shaken out was greater than in the sample taken before the injection, although the total amount was unchanged.

Connections Between Vagus and Sympathetic.—Fick found a constant connection between the ganglion nodosum of the pneumogastric and the superior cervical ganglion of the sympathetic. In 14 per cent. of the cases the ganglions were united into one. This is of obvious importance in extirpation of the cervical ganglion.

Oxidation of Carbohydrates and Hormones.—Gottschalk found an inhibition of the acetaldehyd formation in emulsions of liver and muscle in a 0.1 per cent. solution of epinephrin. Thus it acts antagonistically to insulin which enhances this oxidative phase of glycogen cleavage.

Roentgen Exposures and the Offspring.—Schmitt saw no abnormities in eight children of women whose ovaries had been irradiated to the degree of a temporary menopause.

Blood Phosphates in Myxedema.—Landsberger found less phosphate in the blood serum of very small infants with congenital myxedema than in older babies. Thyroid treatment did not change the findings within three weeks.

Erythrophagocytosis After Splenectomy.—Hirschfeld and Sumi observed a phagocytosis by monocytes in the circulating blood of splenectomized rats, mice and guinea-pigs. Some monocytes contained several cells. Phagocytosis by neutrophils occurred also.

Ventral Position for Infants.—Lasch and Fischer observed early raising of the head and use of the arms in infants kept in the prone position.

Ectoplasm and Endoplasm of Germs and Immune Bodies.—Braun and Nodake found different agglutinins and lysins for the ectoplasm and for the endoplasm of micro-organisms (especially typhoid and proteus bacilli). The ectoplasm antigen is thermolabile, and is necessary for the production of bactericidal serums. Bacteriotropins act on the endoplasm.

Duodenal Intubation in Typhoid Carriers.—Remus requires an examination of the bile to exclude typhoid carriers. He found typhoid bacilli sometimes for weeks in the gallbladder bile while they were absent in the liver bile.

Medizinische Klinik, Berlin

20: 991-1026 (July 20) 1924

*Antitoxin Formation and Treatment. T. Madsen.—p. 991.
The Pupils in Cerebral Syphilis. M. Kastan.—p. 992.
*Spontaneous Hemostasis. G. Magnus.—p. 993.
*Ileus Symptoms in Appendicitis. B. Cohn.—p. 995.
*Action of Acetic Acid on Stomach. J. Vándorfy.—p. 997.
*Economic Aspects of Asthma. Isserlin.—p. 998.
Correction of Sunken Noses. E. Eitner.—p. 1000.
Lethal Addison's Syndrome in Malaria After Arsphenamin Treatment. L. Detre.—p. 1001.
Treatment of Erysipelas. S. R. Brünauer.—p. 1003.
Repeated Ileus. O. Steinke.—p. 1004.
Splashing Sound in Encephalography. H. Moro.—p. 1007.
Biochemistry of Skin Diseases. Stümpke and G. Scika.—p. 1007.
Survey of Otology. Haenlein.—p. 1012.
Survey on Pathologic Anatomy. S. Gräff.—p. 1014.
Medicine in Antiquity. J. Hirschberg.—p. 1024.

Antitoxin Formation and Treatment.—Madsen emphasizes the difference in the time of appearance of various antibodies: Mörch found that the maximum concentration of bacteriotropins is reached in horses on the second day after the injection, while the agglutinins are strongest between the fifth and the seventh day. This might have therapeutic significance. Injection of some metal salts, especially manganese chlorid, enhances the production of antibodies, and is used as a routine procedure at Copenhagen. Walbum had interesting results in guinea-pigs infected with tubercle bacilli. The most efficient way of administration of antitoxin is by the vein. Extremely large doses (up to 200,000) used in diphtheria reduced the mortality to 1.2 per cent. Such amounts of serum do not produce more serum sickness than small amounts, but are very expensive. The dose should be given preferably on the first day.

Spontaneous Closing of the Lumen of Injured Vessels.—Under direct observation, Magnus noted a contraction of

femoral arteries and of capillaries. This contraction—not a thrombus—is the real cause of hemostasis. He believes that some hemorrhagic conditions may be due to a disturbance of this function of the blood vessels.

Ileus Symptoms in Appendicitis.—Cohn reports a case of paralytic ileus from perforation in unsuspected appendicitis. The cause was not determined in spite of careful observation. He recommends that appendicitis be considered in every case of ileus of unknown origin.

Influence of Acetic Acid on Stomach Function.—Vándorfy found that a decinormal solution of acetic acid suppresses the secretion of hydrochloric acid in a normal stomach. The motility is lessened. There is regurgitation from the duodenum, and a secretion from the stomach which dilutes the fluid.

Economic Aspects of Asthma.—Isserlin estimates the number of asthma patients in Germany as about half a million, which is not far from the number of tuberculous infections. The number of persons temporarily disabled by asthma might be about 110,000. There are about one fifth as many persons permanently disabled by asthma as there are by tuberculosis. He recommends a better organized fight against the disease.

Mitteil. a. d. Grenzgeb. der Med. und Chir., Jena

37: 545-691, 1924

*Development and Changes of Gallstones. B. Naunyn.—p. 545.
*Heart and Circulation with Arteriovenous Aneurysms. A. Israel. —p. 551.
*Spores and "Rust Cells" in Goiter. L. Merk.—p. 573.
*Cholecystitis and Cholangitis. I. W. Gundermann.—p. 581. II.—p. 601.
*Chemistry and Histology of Goiters. T. Tobler.—p. 622.
Duodenal Intubation in Biliary Duct Disease. H. Bronner.—p. 641.
*Gastric Ulcer in Pregnancy and Menstruation. A. Szenes.—p. 652.

Development and Changes of Gallstones.—Naunyn deplores the lack of understanding of his conception of the fluid colloid nature of beginning gallstones. Such gels contain from the beginning over 20 or 30 per cent. cholesterol, and continue to adsorb it from the bile and from the degenerated epithelium. Crystallization is only secondary. The section methods usually employed cannot reveal the structure. He keeps to his grinding of gallstones for microscopic examination.

Heart and Circulation with Arteriovenous Aneurysms.—Israel reports on his experiences on eight patients with arteriovenous aneurysms of more than two years' duration. All of them had hypertrophy with dilatation of the heart. This is due to the increased filling of the heart by the strong influx from the artery into the vein. One patient with aneurysm of the carotis was not able to work mentally for any length of time until a few months after the operation. Another was cyanotic but had no subjective trouble except when lowering the head. Elevation of a lower extremity with an arteriovenous aneurysm of the popliteal artery caused distad a deathly pallor of the extremity due to aspiration of the blood into the vein. Stasis just sufficient to compress the veins restored the color. He confirms the bradycardia and increased pressure after compression of the sac. The heart becomes smaller after the operation.

Spores and "Rust Cells" in Goiter.—Merk found in goiters peculiar corpuscles resistant to concentrated sulphuric acid. He believes that they are spores. He also describes cells which he calls "Rostzellen." They contain cholesterol.

Cholecystitis and Cholangeitis.—Gundermann saw staphylococcus cholecystitis occasionally in children and frequently in patients between 20 and 30 years of age. Later it tends to be associated with cholelithiasis. The prognosis is good (one death among 132 patients), because staphylococci do not seem to induce grave suppuration in the gallbladder. Streptococci cause similar but more frequently recurring attacks. Colon bacillus infections cause death more often. Paratyphoid B is dangerous. Empyema, ulceration and perforation occur.

Chemistry and Histology of Goiters.—Tobler determined the iodin content in various thyroids. He confirms the low iodin content in exophthalmic goiters. Patients who had been treated with iodids had larger amounts of it in the thyroid, without regard to the clinical symptoms. Some of those who presented toxic symptoms after iodin treatment had no larger amounts of iodin deposited than other patients without symptoms. The histologic examination showed in the majority, but not in all of these toxic cases, a resemblance to the findings in exophthalmic goiter. Ligation of the arteries produced rapid and good results.

Gastric Ulcer in Pregnancy and Menstruation.—Szenes frequently found an amelioration of the discomfort from gastric and duodenal ulcer in pregnancy. He attributes it to the lowered acidity of the gastric juice, change in the position of the stomach, and fattening. Experiments on dogs revealed slightly greater tendency toward healing in the gravid animals. Menstruation increased the discomfort only in a few women. The menopause seems to be an aggravating factor.

Münchener medizinische Wochenschrift, Munich

71: 791-1008 (July 18) 1924

*Colloid Treatment. III. H. Bechhold.—p. 971.
*Goiter Prevention in Switzerland. H. Eggenberger.—p. 972.
Depressor Action of Artificial Sunlight. Pollitzer and Stolz.—p. 977.
*Blood Pressure During Respiration. W. Hueck.—p. 978.
Rissmann's Treatment of Eclampsia. Süss.—p. 980.
*Practitioners and Ileus. O. Specht.—p. 981.
Mycoses of Scalp. K. Stordeur.—p. 985.
Mineral Metabolism. Grumme.—p. 985.
Vasomotor and Trophic Neuroses. H. Curschmann.—p. 985.
Infant Mortality Statistics. E. Maurer.—p. 987.
Estimation of Disability After Accidents. H. Kämmerer.—p. 988.

Colloid Treatment.—Bechhold found that mice die from paratyphoid or suisepticus infection much earlier when kept in the incubator than at room or icebox temperature. Infected animals which had recovered after injections of various colloidal substances died from a recurrence of the infection when put into the incubator. The germs isolated from these animals failed to kill healthy mice even when the amount injected was very large. He believes therefore that colloidal treatment helps the animal to make the germs less virulent. He points to the interesting influence of extraneous factors (heat) on the provocation and course of a latent infection.

Goiter Prevention in Switzerland.—Eggenberger agrees with Hunziker in regarding goiter as a reaction to a deficiency of iodin intake. Chatin's investigations, made seventy years ago, showed clearly the coincidence between low iodin content of water and food and the frequency of goiter. Nevertheless his opponents for a long time prevented the acceptance of this fact. The use of iodized table salt introduced into the canton of Vaud two years ago has given most encouraging results. Mothers who keep on using the old pure salt have, as before, about 50 per cent. of babies with enlarged thyroids. The new-born children of those who use iodized salt have normal thyroids. He never saw injury from doses of iodin lower than 20 mg. per month.

Blood Pressure During Respiration.—Hueck measured the blood pressure while healthy subjects were holding their breath. He found that it increased in proportion to the conscious effort necessary for holding the breath. The blood pressure was lowered in the apneic phases of Cheyne-Stokes' breathing in a patient with hypertension.

Practitioners and Ileus.—Specht publishes mortality statistics to demonstrate that practitioners should send immediately to the hospital every patient with any of the symptoms of ileus. Attempts to formulate an exact diagnosis in acute cases only make them lose precious time.

Zeitschrift für Krebsforschung, Berlin

21: 261-336 (July 15) 1924

Biology of Cancer Cells. A. Fischer.—p. 261.
Chemotherapy of Cancer. I. F. Ishiwara.—p. 268.
*Electropic Treatment of Cancer. Karczag et al.—p. 273.
*Tumor Growth in Relation to Nourishment. I. M. Handel.—p. 281. Idem. II. Idem and K. Tadenuma.—p. 288.
Treatment of Cancer by Induced Inflammation, Possibly as Postoperative Measure. H. Spude.—p. 294.
Ovarian Tumor in a Fish. M. Plehn.—p. 313.
Incipient Skin Cancer. W. Nissen.—p. 320.
Action of Roentgen Rays on Organism. D. Lieber.—p. 325.

Electropic Substances in Treatment of Experimental Cancer.—Karczag and his co-workers' vital chemoscopy has apparently demonstrated that the intramolecular arrangement

of certain stains is determined by the electrostatic charge and not by chemical agents. These stains display an affinity for connective tissue. In mouse cancer, the living cancer cells did not take up the stain, but fuchsin S, light green and water blue were electively attracted and stored by the necrotic portions of the malignant tumor, owing to their electrostatic attraction for the dyes.

Tumor Growth and Nourishment.—Händel was unable to detect any influence on the growth of mice tumors from lack of salts in the food or addition of phosphates, but the growth of the cancer seemed to be promoted by feeding potassium, while it was checked slightly by feeding calcium.

Zeitschrift für Tuberkulose, Leipzig

40: 161-240 (May) 1924

Nature of Tuberculin. G. Deycke.—p. 161.
Latent Periods in Pulmonary Tuberculosis. H. Grau.—p. 176.
Mild Generalized Tuberculosis. E. Fraenkel.—p. 181.
Connection of Amenorrhea with Tuberculosis. C. Stuhl.—p. 189.
*Effect of Castration on Tuberculosis. F. M. Bricker.—p. 198.
Sedimentation Test in Tuberculosis. Windrath and Garnatz.—p. 203.

Effect of Castration on Tuberculosis.—Bricker says that normal rabbits, inoculated with tubercle bacilli, started to lose weight at once, while castrated rabbits did not change for a long time. It seems that the removal of the genital glands produces physiologic and chemical changes which enhance the resistance against the tubercle bacilli.

40: 241-320 (June) 1924

Effect of Certain Factors on Tuberculin Reaction. E. Lange.—p. 241.
Addison's Disease in Guinea-Pig. J. Y. Sumiyoshi.—p. 254.
Tuberculosis in Prisoners. H. Thiele.—p. 264.
Gymnastics in Therapy of Tuberculosis. G. Simon.—p. 266.
*Sedimentation Test in Tuberculosis. Bochalli.—p. 274.
*Roentgenotherapy in Pleurisy. T. Bársony and J. Holló.—p. 278.
*Distention of Apex. A. Bogdanow and A. Golemanow.—p. 280.
Pulmonary Tubercles of Toxic Origin. R. Jaffé.—p. 284.
Reply. H. Guillery.—p. 286.

Sedimentation Test in Tuberculosis.—Bochalli found a normal speed of sedimentation of erythrocytes in latent tuberculosis of the lungs, and acceleration in active processes. The diagnosis cannot be based on this sign, but it may help in doubtful cases.

Roentgenotherapy in Pleurisy.—Bársony and Holló extol roentgen-ray treatment in chronic pleurisy without effusion. The pain is relieved after the first exposure, but two or three more are necessary to avert a relapse. A surprising result was obtained in two cases of acute pleurisy. The irradiation was applied to the painful region at a focus distance of 30 cm., with aluminum filter of 3 mm. The dose was four-fifths of the skin dose, once a week, repeated three or four times. The treatment is contraindicated with a complicating pulmonary lesion.

Diagnostic Import of Induced Distention of Apex of Lung.—Bogdanow and Golemanow noted that a tuberculous apex cannot be distended with the Valsalva experiment to the same extent as a normal apex. The difference is more marked if only one lung is affected. The distention cannot be produced in a pleuritic apex. It is negative in pneumothorax with pleural adhesions. If the walls of an anterior cavity are thick, the inflation is subnormal; it is exaggerated if the walls are thin. In emphysema the distention is increased.

Zentralblatt für Chirurgie, Leipzig

51: 1607-1670 (July 26) 1924

*Biliary Colic Without Gallstones. F. F. Finkenheim.—p. 1608.
*Treatment of Furunculosis of Face. A. Gruca.—p. 1619.
Plastic Operations on the Hard Palate. W. Rosenthal.—p. 1621.
Intracardiac Injections in Heart Failure After Lumbar Anesthesia. G. Raeschke.—p. 1628.

Biliary Colic Without Gallstones.—Finkenheim reports a series of seventy-four cases of biliary colic in which no gallstones were discovered at operation but in which, instead, inflammatory changes in the gallbladder or vicinity were found. Six died, a mortality of 8.1 per cent.

Treatment of Furunculosis of the Face.—Gruca reports excellent results in furunculosis of the face from the use of vaccines prepared after the Delbet method, containing staphylococcus, streptococcus and pyocyaneus, injected intramuscularly. After twenty-four hours, in every case without exception there was a distinct retrogression of objective inflammatory symptoms; the pus was thinner, and usually eventually broke through. The fever caused by the injection disappeared within two days.

Nederlandsch Maandschrift v. Geneeskunde, Leiden

12: 379-419, 1924

*Psychic Factors in Infant Feeding. Cornelia de Lange.—p. 379.
*Blood Transfusion in Leukemia. J. Munk and J. de Geus.—p. 386.
*Kidney Tumors in Children. J. C. Schippers.—p. 400.

Psychic Factors in Infant Feeding.—De Lange refers to what she calls "sensitive children," in institutions, and describes three typical instances to show what can be accomplished by change to another room and diversion. Even very young infants are sensitive to music, and she has found that infants with pylorospasm can often be coaxed to take the thicker food necessary if they are given a little baby-talk and "canned music." One child that vomited habitually weighed only 2,660 gm. at the sixth month. It was then transferred from its quiet room to the noisiest part in a ward, and every nurse that had a free moment was encouraged to sit down beside this child, talk to it a little and turn on the music, or even take it up. The child was also given a cracker. The weight began to increase from the first day and the fretful child was transformed. Some infants will not take the bottle except from a certain attendant, and these women have to be brought from the washroom or kitchen each time when their turn of service takes them out of the ward.

Blood Transfusion in Acute Lymphatic Leukemia.—Munk and de Geus relate that in the girl of 6 and the boy of 5 a striking change for the better was apparent at once after transfusion of blood from the mother or father. The erythrocytes and the hemoglobin in the blood stream showed a marked increase, but the transfused neutrophils seemed to have been destroyed at once. This suggests that leukolysins or leukotoxins may be responsible for the whole clinical picture, but experiments on animals injected with serum from these patients showed no appreciable difference between this and normal serum. Subcutaneous injection of 10 per cent. gelatin solution was not followed by a polymorphonuclear leukocytosis. The benefit from the blood transfusion was transient, and both children died in about a month.

Kidney Tumors in Children.—Schippers gives the details of twelve cases from his own service. Of 145 operative cases recently compiled, only five of the patients are known to be living without recurrence four years later. All of his own patients died, with or without operation, except one who is now taking a course of roentgenotherapy, the condition being inoperable, and a girl who for nearly two years—four years ago—presented symptoms of a tumor in the right kidney, but it then suddenly subsided completely and permanently. It must have been hydronephrosis which spontaneously corrected itself.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

2: 1-140 (July 5) 1924

*Internal Medicine in the Netherlands in the Last Seventy-Five Years. A. J. van der Weyde.—p. 6.
*Medicine Since 1849. C. F. A. Koch.—p. 21.
Development of Ophthalmology Since 1849. J. van der Hoeve.—p. 33.
Idem. Otorhinolaryngology. H. Burger.—p. 43.
Lupus in the Netherlands. S. Mendes da Costa.—p. 48.
*Death Rate in the Netherlands Since 1848. H. J. W. D. Fortuyn.—p. 53.
*The Excess of Male Infants at Birth. J. Sanders.—p. 91.
British Laws on Vaccination Against Smallpox. Putto.—p. 97.
*Smallpox in the Netherlands Since 1872. J. G. Sleeswijk.—p. 101.

Medicine in the Netherlands During the Last Seventy-Five Years.—The Netherlands Medical Association celebrated its seventy-fifth anniversary recently, and this number of the *Tijdschrift* is devoted to a review of what has been accomplished during this three quarters of a century. Fortuyn gives numerous charts of the declining death rate. In 1849, the death rate per thousand inhabitants was 31.2; in 1923, 9.9. From 1919 to 1922 the average death rate per thousand inhabitants was 11.6, and the death rate per hundred living children born was 7.1. Both of these figures are lower than

in North America, England, Denmark and Switzerland, but Australia and New Zealand have still lower figures. Known cases of malignant disease have increased from 3.5 per ten thousand inhabitants in 1866 to 11.5 in 1921. The consumption of alcoholic beverages has declined from 7.53 liters per capita in 1852 to 2.88 in 1922. Diphtheria and scarlet fever seem to prevail about the same as ever, but the mortality of 7.2 per cent. in scarlet fever in 1899 dropped to 1.03 and 0.78 in 1922 and 1923, and of diphtheria from 21.14 in 1895 to 6.71 and 5.59.

Excess of Boy Babies at Birth.—The age of the parents at the birth is recorded in 215,038 Amsterdam cases; in 25,000 at Rotterdam, and in Methorst's compilation of 683,473 cases throughout the Netherlands. The largest excess of boy births was with mothers between 30 and 34 in the first group, and between 25 and 29, or 20 and 24 in the others.

Smallpox in the Netherlands.—Sleeswijk corrects an error in a report of his address on this subject. Instead of only "300 cases of smallpox since the vaccination law of 1872," the figure should be 3,000, but Fortuyn's charts show zeros for the last seven years.

Ⅱ: 175-322 (July 12) 1924

Experiences with Abortion Cases. VI. J. A. van Dongen.—p. 182.
*Unrecognized Hip Joint Anomalies. L. v. d. S. van Ommeren.—p. 190.
Sanatorium Treatment of Tuberculosis. J. van Epen.—p. 193.
*Treatment of Cancer of the Esophagus. W. F. Wassink.—p. 203.
Hematemesis in Childbirth. W. F. K. Gouwe.—p. 208.
Causal Agent of Scarlet Fever. C. H. H. Spronck.—p. 209.
Medical Impressions of America. C. U. Ariens Kapper.—p. 236.

Hip Joint Disease.—Van Ommeren remarks that every hip joint responds in its own way to disturbances of any kind, the result being a great variety of clinical pictures, but Calot has cleared up the confusion in great measure by tracing the disturbance in many cases to a congenital subluxation. It often escapes detection, but tailors and shoemakers comment on the frequent lack of symmetry in the hip joints, legs and feet, the result of overlooked anomalies of the kind.

Cancer of the Esophagus.—Wassink has tried to treat cancer of the esophagus with radium in 18 cases in the last year. Three have been practically cured so that they have been free from disturbances for from three and a half to eight months; 3 others were much improved for a few months but then died from pericarditis or other cause. In 3 cases the stenosis was too tight to allow the use of radium at all, and in 7 others only imperfectly.

Acta Pædiatrica, Upsala

Ⅱ: 235-434, 1924

*Acidosis of the New-Born. A. Ylppö.—p. 235.
*Pathogenesis of Diabetes Insipidus. L. Salomonsen.—p. 261.
Hypoplastic Fetal Chondrodystrophia. D. D. Lebedew.—p. 290.
*Intestinal Infantilism. W. Pipping.—p. 342.
Pathogenesis of Anaphylactic Asthma. K. Baagöe.—p. 369.
Spinal Cord in Congenital Syphilis. C. De Lange.—p. 385.
*Tuberculosis in First Five Years of Life. A. Lichtenstein.—p. 397.
*Congenital Syphilitic Myocarditis. N. Johannsen.—p. 419.

Acidosis of New-Born.—Ylppö found that the hydrogen ion concentration of the gas-free serum and blood corpuscles is higher in the new-born than in infants a few hours older. Saponin hemolysis causes an increased acidity of the blood.

Pathogenesis of Diabetes Insipidus.—Salomonsen demonstrates a quicker elimination of added sodium chlorid in diabetes insipidus than in a normal control. This is explained by the usual retention of water with the salt in healthy persons, and the inability of the insipidus patient to retain water. There is no inability to concentrate chlorids in diabetes insipidus but simply an increased water elimination. Pituitrin decreases the diuresis. It increases the concentration of sodium chlorid in the urine, but decreases its absolute amount. It seems that its primary action is the inhibition of water secretion. The water is retained in the blood, and the lowered excretion of chlorid tends to keep up the isotonia of the serum although it is not sufficient for it. The excretion of organic constituents of the plasma is not inhibited by pituitary extracts. Fever decreases the water elimination in insipidus as well as in other diseases. Reduction of the intake of sodium chlorid failed to lower the polyuria in his patient. Even when it is successful, the decrease in water elimination is not proportionate to the decreased chlorid intake. It is possible to explain the result by the lowering of the chlorid content of the tissues which would cause thirst.

Intestinal Infantilism.—Pipping reports the history of six children with recurring intestinal disturbances and retarded physical development. Only one of them survived. Proteins were better tolerated than carbohydrates and fat. Albumin milk gave fair results. Cow's milk was unsuitable. On the other hand, human milk without any addition seems to have saved the life of the last patient, a girl 2½ years old.

Tuberculosis in First Five Years of Life.—Lichtenstein finds in various localities a regular proportion between the tuberculosis death rate in adults and in children under 5 years of age. The tuberculosis rate in cattle in the different counties of Sweden varies considerably without any relation to the death rate of children.

Congenital Syphilitic Myocarditis.—Johannsen believes that syphilitic myocarditis is not quite rare in congenital syphilis. Clinically, it may cause evident organic lesions. Sudden death may occur.

Norsk Magazin for Lægevidenskaben, Christiania

88: 369-504 (June) 1924

*Gastric Secretion in the Healthy. A. O. Haneborg.—p. 369.
*Sedimentation Test in Tuberculosis. A. de Besche.—p. 408.
*Hematoporphyrinuria. F. Harbitz.—p. 422.
Cholecystitis from Pneumococcus Mucosus. Grøndahl.—p. 442.
Alastrim or Smallpox? Y. Ustvedt.—p. 450.
*To Prevent Decomposition of Urine. Brandt and Stokstad.—p. 456.

Gastric Secretion in the Healthy.—Haneborg's series of tests on two healthy medical students with bouillon, tea, coffee, chocolate, pepsin, peptone and bitter tonics demonstrated, among other things, that the "psychic" secretion of gastric juice does not continue for more than half an hour at most, and accounts for scarcely 20 per cent. of the total secretion after a meal. Anything taken into the stomach, even water, induces some secretion, but it is not proportional to the amount ingested, and hence can hardly be explained by mechanical factors. The xanthin or purin bases were found responsible for the chemical secretion. The amount required is not large, and there is less gastric secretion and less diuresis when this optimal amount is surpassed. This depressing influence of large amounts was particularly striking in the tests with coffee. Caffein-free coffee did not increase gastric or renal secretion more than water alone. Bouillon, tea and coffee leave the stomach early, in an hour or hour and a half, and the action of bitter tonics seems to be almost exclusively in promotion of peristalsis. The extensive research has apparently demonstrated that the motor function of the stomach is more important for health than conditions in the gastric secretion. As long as the stomach is regularly evacuated, even hypersecretion does no harm. The aim in treatment of dyspepsia and other stomach disturbances should therefore be to ward off or correct the slightest anatomic or nervous impairment of the motor function.

Sedimentation Test in Tuberculosis.—De Besche's study of fifty tuberculous men corroborates the value of normal suspension stability of the blood as a sign that the tuberculous process is latent or stationary.

Hematoporphyrinuria.—Harbitz describes as a clinical entity the fourteen year course, with the necropsy findings, in a case of idiopathic constitutional hematoporphyrinuria. The attacks of abdominal pain with vomiting and port wine urine returned once or twice a year and at the sixth year led to a futile operation for assumed gallstones. In three other cases the porphyrinuria was a symptom in the course of acute yellow atrophy of the liver or of excessively large doses of narcotics or after chloroform anesthesia. The frequent occurrence of urobilin with the porphyrin in the urine and certain necropsy findings tend to incriminate the liver.

To Preserve Urine for Examination.—Brandt and Stokstad extol the advantages of adding sulphuric acid or hydrochloric acid instead of disinfectants. A p_H of 5 or 5.2 seems most propitious to prevent decomposition in the twenty-four hour urine.